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Analysis of the Medicare CAHPS[®] 2001 Disenrollment Reasons Survey

Final Report

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DISENROLLMENT REASONS SURVEY

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Symbols

...	Category not applicable
**	Significant at the 99% level of confidence.
*	Significant at the 95% level of confidence.
(*)	Significant at the 90% level of confidence.

EXECUTIVE SUMMARY

Introduction

The Centers for Medicare & Medicaid Services (CMS) funds the development and implementation of an annual national survey to identify the reasons beneficiaries voluntarily leave health plans. The Medicare Consumer Assessment of Health Plans (CAHPS®) Disenrollment Reasons Survey data are intended for several uses:

- To provide information to help beneficiaries make better informed health plan choices;
- To assist Medicare managed care (MMC) plans and Quality Improvement Organizations (QIOs) to identify areas in which they can focus their quality improvement activities; and
- To enable CMS to monitor MMC plan performance at different geographic levels and for individual plans.

The Disenrollment Reasons Survey fulfills the obligation that all Medicare plans with contracts with physicians or physician groups that are at high risk of referral to specialists to conduct an annual disenrollment survey. In addition, the Disenrollment Reasons survey provides information to support the reporting of disenrollment rates on all MMC organizations required by the Balanced Budget Act of 1997. National public reporting of MMC disenrollment rates began in 2000, and reporting of reasons for disenrollment began in 2002 to ensure that disenrollment rates would be meaningful to beneficiaries making health plan choices.

Unlike the privately insured, who can usually only switch plans once per year, Medicare beneficiaries who choose to enroll in a private MMC plan must stay in that plan for a minimum of only one month. Consequently, “voluntary” disenrollment has been viewed as a good “summary” indicator of member satisfaction and plan quality and an important outcome (US GAO, 1996; US GAO, 1997; US GAO, 1998; Buchmueller, 2000). Furthermore, with the recent passage of Medicare reform legislation that includes continued emphasis on providing private health plan options, understanding the determinants of consumers’ choices among competing health plans remains an important topic.

Analysis of data from the first year of the Disenrollment Reasons Survey focused on providing primarily descriptive results. Building on this analysis of voluntary disenrollment during 2000, this report provides a more comprehensive set of analyses to help the reader better understand the determinants of voluntary disenrollment during 2001, i.e., why Medicare beneficiaries choose to leave their MMC plans.

Two Ways to Look at Reasons for Voluntary Disenrollment

This report includes two different ways to measure beneficiaries’ reasons for disenrollment: (1) All Reasons each survey respondent gave for leaving and (2) each survey respondent’s Most Important Reason (MIR) for leaving. Results of All Reasons are derived from responses to 33 preprinted reason items on the Disenrollment Reasons Survey (e.g., Did

you leave health plan X for reason Z...?) and one two-part “other reasons” fill-in item (e.g., Were there other reasons... if so please describe them.)¹ Respondents could choose as many of the 33 preprinted reasons as desired. By contrast, the Most Important Reason (MIR) is derived from a single survey response item—a fill-in survey question: “What was the one most important reason you left health plan X?” Responses to this MIR question were coded in a manner similar to the preprinted reason items.

For purposes of analysis and reporting, individual survey responses to both the All Reasons and Most Important Reason survey questions were assigned to a set of eight more general categories of reasons for leaving. These eight categories, or “reason groupings” (and the abbreviated labels we use to refer to these groupings), are:

1. problems with information from the plan (Plan Information);
2. problems getting doctors you want (Doctor Access);
3. problems getting care (Care Access);
4. problems getting particular needs met (Specific Needs);
5. other problems with care or service (Other Care or Service);
6. premiums or copayments too high (Premium/Costs);
7. copayments increased and/or another plan offered better coverage (Copayments/Coverage); and
8. problems getting or paying for prescription medicines (Drug Coverage).

Respondents could be assigned to multiple All Reasons groupings depending on how many of the 33 individual items they cited and the distribution of those items across the eight reason groupings. In contrast, respondents were assigned to only one Most Important Reason (MIR) grouping based on their response to this single item. For consumer reporting and some of the analysis, these eight groups were collapsed further into five MIR groups: Care Access, Specific Needs, and Other Care or Service were combined into a general Care category, and Premium/Costs and Copayments/Coverage were collapsed into a general Premium & Copays category.

Methods

The target population for the 2001 Reasons Survey consisted of Medicare beneficiaries who *voluntarily* left one of 196 MMC organizations and continuing cost contracts during calendar year 2001. Although data are analyzed and reported on an annual basis, the Reasons Survey is conducted on a quarterly basis to determine the *reasons* Medicare beneficiaries leave their MMC plans. A sample of Medicare beneficiaries who disenroll during one quarter is selected at the beginning of the next quarter, with data collection taking place over the next 4

¹A copy of the entire 2001 Medicare CAHPS Disenrollment Reasons Survey is provided in Appendix A.

months. The Reasons Survey is administered as a mail survey with telephone follow-ups for nonrespondents. The final response rate for 2001 was 67.8 percent. The data were weighted and adjusted for nonresponse. After removing responses from individuals whose employers no longer offered the health plan in question, and those who disenrolled to join the Tricare for Life program (a special one-time opportunity for those eligible for military benefits), the nationally representative analytic sample included 24,495 Medicare beneficiary respondents who *voluntarily* disenrolled from 196 MMC organizations during 2001.

To model the complex environment that influenced beneficiary reasons for disenrollment, we considered beneficiary-level variables, variables that may be important in their neighborhood or healthcare market, and variables describing the plan from which they disenrolled. We selected subgroup variables from items available on the Disenrollment Reasons Survey and/or available from CMS administrative records. In addition to variables that identify the subgroups of Medicare beneficiaries traditionally considered to be particularly vulnerable, we also examined specific types of disenrollees, e.g., those disenrolling to another managed care plan versus those disenrolling to fee-for-service (FFS) coverage. The beneficiary subgroup variables chosen for this analysis fall into four main categories: health status, health insurance characteristics, other disenrollee characteristics, and sociodemographic variables. We used data from a number of other sources (other than the Reasons Survey) to compile plan-benefit variables, plan-specific variables, and market-level variables.

We conducted two broad types of analyses—beneficiary-level and plan-level. Examining both types allowed us to answer important research questions, shedding light on different perspectives of the complex beneficiary choice decisions. The objective of the beneficiary-level subgroup analysis was to determine whether beneficiaries with different health status, health insurance, health care utilization, and sociodemographic characteristics chose to leave MMC plans for different reasons. The objective of the plan-level analysis was to investigate the assertion that reports of plan disenrollment rates can suggest beneficiaries' relative satisfaction with various attributes of their plans, including quality of care.

At the beneficiary level, we conducted both descriptive and multivariate analyses of the two different types of reasons (All Reasons and the MIR). The descriptive analysis examined each factor in isolation, and looked for significant differences across subgroups in the propensity to cite each reason. The multivariate analysis allowed us to control for confounding and contextual factors when examining differences for disenrollment among subgroups. We used different empirical models for the All Reasons and the MIR multivariate analyses, since the two types of reasons had different properties. For the All Reasons data, we used binary logistic models to estimate the probability of a beneficiary citing at least one reason in that grouping, with a separate model for each separate reason grouping. For analysis of the MIR, since beneficiaries could only state one reason as their most important, we were able to use a multinomial approach that allowed us to assess the importance of each reason group relative to a reference group, with Premium & Copays as the reference group.

The outcome variable for the plan-level analysis was the 2001 voluntary disenrollment rate for managed care organizations (MCOs) participating in Medicare, as calculated by CMS using MMC enrollment data. After conducting preliminary descriptive and bivariate analyses to examine potential explanatory variables, we ran a series of multivariate regression models to

investigate relationships between MCO disenrollment rates and groups of potential covariates, due to the small number of MCOs available for analysis. In our first model, we examined the relationship between disenrollment rates and the characteristics of disenrollees in each MCO. In the next model, we examined relationships between disenrollment rates and disenrollees' reasons for leaving. A third model included significant disenrollee characteristics and reasons for leaving. We followed a similar process when introducing other types of variables that were measured at the plan- or market-level. Using this approach, we attempted to identify the best possible model for explaining plan-level disenrollment rates based on disenrollee characteristics, disenrollee's reasons for leaving, plan-level premiums and benefits, other plan characteristics, and market characteristics.

Findings

Beneficiary-level Results

The factors that motivated a Medicare beneficiary to enroll or disenroll from a given health plan were multifaceted. A variety of complicated and interrelated issues played roles in this decision, including costs, provider availability, patient provider communication, benefit packages, access issues, and bureaucratic impediments. The top six of the 33 possible reasons beneficiaries cited (and the corresponding percentage of beneficiaries) for disenrolling from their health plan were:

- Another plan offered better benefits or coverage for some types of care or services (42%).
- Another plan would cost you less (39%).
- The plan started charging you a monthly premium, or increased the monthly premium that you paid (36%).
- The plan did not include the doctors or other health care providers you wanted to see (28%).
- After you joined the plan, it wasn't what you expected (27%).
- You could not pay the monthly premium (27%).

One of the All Reason groups (Premium/Costs) was composed entirely of some of the most prevalent reasons, making it the most prevalent of the All Reasons. This most prevalent reason group—Premium/Costs issues—was also the most prevalent for the analogous cluster category in the MIR. Thus, the two different reasons groupings (All Reasons and MIR) do agree in that, whichever is used, cost reasons were the most important factors in determining why beneficiaries disenrolled.

Bivariate beneficiary-level analysis summary—For the descriptive beneficiary-level analysis, we were interested in the question: for each **reason grouping**, which subgroups of MMC plan voluntary disenrollees are *more likely* than other disenrollees to leave? We summarize the findings as follows: we state the frequency of citation for each reason group type

in parenthesis (i.e., All Reasons %, MIR %), followed by a list the subgroups significantly more likely to cite the reason.

- **Copayments/Coverage (55%, 10%):** under 65 disabled (vs. 65–69), poor to fair health (vs. excellent)
- **Premium/Costs (54%, 31%):** under 65 disabled (vs. 65–69), dually eligible (vs. not dually eligible)
- **Doctor Access (41%, 27%):** College graduates (vs. no high school), not dually eligible (vs. dually eligible)
- **Plan Information (38%, 8%):** under 65 (vs. 65–69), Hispanic (vs. non-Hispanic Caucasian), African American (vs. non-Hispanic Caucasian), poor to fair health (vs. excellent), dually eligible (vs. not dually eligible), no high school (vs. college graduates)
- **Drug Coverage (31%, 10%):** under 65 disabled (vs. 65–69), poor to fair health (vs. excellent)
- **Care Access (29%, 7%):** under 65 disabled (vs. 65–69), Hispanic (vs. non-Hispanic Caucasian), dually eligible (vs. not dually eligible), poor to fair health (vs. excellent)
- **Other Care or Service (27%, 5%):** Hispanic (vs. non-Hispanic Caucasian), poor health (vs. excellent)
- **Specific Needs (23%, 3%):** under 65 disabled (vs. 65–69), dually eligible (vs. not dually eligible), poor to fair health (vs. excellent)

For the descriptive beneficiary-level analysis, we were also interested in the question: for each **beneficiary subgroup**, for which reasons are MMC plan voluntary disenrollees in the subgroup *more likely* than other disenrollees to leave? We list the subgroups significantly more likely to cite specific reasons, followed by a list of the reasons found more likely:

- **Under 65 disabled (vs. 65–69):** problems with Plan Information, Care Access, Specific Needs, premiums/costs, Copayments/Coverage, and Drug Coverage
- **Poor to fair health (vs. excellent health):** problems with Plan Information, Care Access, Specific Needs, Copayments/Coverage, and Drug Coverage
- **Less than high school education (vs. college graduate):** problems with Plan Information
- **Hispanic (vs. non-Hispanic Caucasian):** problems with Plan Information, Care Access, and Other Care or Service
- **African Americans (vs. non-Hispanic Caucasian):** problems with Plan Information

- **Dually eligible (vs. not dually eligible):** problems with Plan Information, Care Access, Specific Needs, Premium/Costs.

Multivariate beneficiary analysis summary—We found internal consistency across the descriptive and multivariate analyses. A particular question we sought to answer with the multivariate analysis was, “Are beneficiaries in some subgroups of MMC plan voluntary disenrollees more likely to cite specific reasons for disenrollment, once confounding contextual factors are held constant statistically?” We found that, even controlling for confounding by plan-level, market-level, and other subgroup characteristics, there were significant differences among the subgroups in the reasons cited for disenrollment. In fact, once these sources of confounding were controlled for statistically, we found significant differences across subgroups that were not always apparent in the descriptive (bivariate) analysis, especially for the MIR.

A summary of key findings about specific subgroups that were consistent for both All Reasons and MIR follows:

- The **most elderly** were less likely than the least elderly to cite Drug Coverage than Premium & Copays.
- The **non-elderly disabled** were more likely to cite both Drug Coverage and Premium/Costs reasons than the youngest elderly (aged 65–69) as a reason for leaving and were more likely to cite Drug Coverage than Premium & Copays as their most important reason.
- **African-Americans** were less likely than non-Hispanic Caucasians to state Doctor Access as a reason for leaving and, specifically, versus Premium & Copays, as their most important reason for leaving.
- **Hispanic** disenrollees were more likely than non-Hispanic Caucasians to cite Care Access and Other Care or Service problems as reasons for leaving, and were more likely to cite Care problems than Premium & Copays as their most important reason.
- Disenrollees with less than a high school **education** were less likely to cite problems with Doctor Access or Care than Premium & Copays as their most important reason for disenrolling.
- Individuals with worse **self-assessed health status** were significantly more likely (than those in better health) to cite problems with Plan Information, Doctor Access, Care, and Drug Coverage as reasons for leaving. Furthermore, they were more likely to indicate that Care, Doctor Access, and Drug Coverage reasons (but not Plan Information) were their most important reasons for leaving versus Premium & Copays.

Another question we addressed was, “What plan and market characteristics are associated with beneficiaries citing specific reasons for disenrollment, and how do these contextual factors interact in their influences on beneficiary decisions?” We found that various plan- and market-level effects, such as the level of managed care penetration and the availability of physicians in the state, were important determinants of disenrollment decisions. Furthermore, the impact of

combinations of several of these effects when they occurred in the same markets was even greater, suggesting significant geographic variation in choice environments.

Plan-level Results

In the plan-level analysis, we found the following in response to three specific research questions.

Are higher voluntary plan disenrollment rates associated with citing specific types of reasons? With citing more reasons?

In the absence of controls for any other factors, higher plan-level disenrollment rates were moderately associated with higher percentages of disenrollees citing Drug Coverage issues, Doctor Access, Plan Information problems, Specific Needs issues, and Copayments/Coverage issues. In addition, higher disenrollment rates were also associated with the number of reasons cited. On average, disenrollees from MCOs with higher disenrollment rates cited more reasons for leaving than disenrollees from MCOs with lower disenrollment.

Do high disenrollment rates suggest problems with access or quality of care for certain beneficiaries?

When we introduced information to control for the characteristics of disenrollees along with their reasons for leaving a plan, we found that higher disenrollment rates were associated with higher percentages of disenrollees who had not graduated from high school, who were Hispanic, who left their plan to go to another MCO (rather than Original Medicare), and who cited problems with Doctor Access or concerns about Premium/Costs as their reasons for leaving. Higher disenrollment rates were associated with lower percentages of disenrollees reporting poor or fair health and lower average ratings of their former health plan. In other words, we found no evidence to support the assertion that higher disenrollment rates may suggest problems with quality of care.

What plan and market characteristics are associated with beneficiaries leaving plans?

We examined the relationships between MCO disenrollment rates and a variety of characteristics of the MCOs themselves, as well as the markets in which they operate. We found that higher disenrollment rates were associated with higher Medicare managed care (MMC) payments in the MCO's market, for-profit tax status, and a greater percentage of the population in the state being underserved by primary care physicians. Lower disenrollment rates were associated with having fewer physicians per 1,000 elderly people in the county, and with having more elderly households with lower incomes.

CMS' administrative records prior to 2002 only tracked the MCO where a beneficiary enrolled, not the specific benefit plan within the MCO under which the enrollee was covered. Consequently, our plan-level analysis was based on a general assumption that enrollees would sign up for the least costly, most generous plan offered by an MCO. This assumption may have distorted the findings. Also, some of the reasons for leaving were highly correlated with plan coverage and may be serving as a proxy for actual benefits.

Although these findings should be considered tentative since they are based on only one year of disenrollment data, it appears that higher disenrollment rates were more likely to be associated with issues surrounding providers and costs, rather than problems with quality. This is further supported by the fact that higher disenrollment rates were associated with fewer disenrollees reporting poor or fair health. However, higher disenrollment was associated with a greater number of Hispanic disenrollees and more disenrollees without a high school education. Higher disenrollment rates were also associated with some specific plan and market characteristics, such as for-profit tax status, lower ratings of plan in the past, more disenrollment to other MMC organizations (rather than to Original Medicare), higher payment rates to MMC organizations, and lower availability of physicians in the state. In other words, disenrollment rates appear to be a better measure of “health care market” performance than of “health care quality” performance.

CHAPTER 1 INTRODUCTION AND BACKGROUND

Two legislative actions caused the Centers for Medicare & Medicaid Services (CMS) to undertake the implementation of a nationwide survey of Medicare voluntary disenrollees from each Medicare managed care (MMC) plan. First, under the Physician Incentive Regulation Act of 1997, all Medicare and Medicaid plans that have contracts with physicians or physician groups that are at high risk of referral to specialists are required to annually conduct an enrollment and a disenrollment survey and report the results of both to CMS. In 1997, CMS pledged to MMC plans that it would develop a disenrollment survey and implement it nationwide to relieve those plans qualified for inclusion in the survey of the burden of conducting their own surveys. Second, the Balanced Budget Act of 1997 required that CMS report 2 years of disenrollment rates on all MMC organizations.

Voluntary disenrollment rates from managed care plans are often viewed as a good “summary” indicator of member satisfaction and plan quality (US GAO, 1996; US GAO, 1997; US GAO, 1998). Because “managed care” relies on the ability of patient-consumers to choose among competing health insurance plans, “voluntary disenrollment” has been recognized as an important outcome, one that may reflect plan performance and satisfaction with care (Buchmueller et al., 2000). Interest in disenrollment has been reinforced by the preponderance of market-oriented health care proposals during the past four sessions of Congress and the recent passage of Medicare reform legislation that continues to rely on private health plan options.

Along with various other mandates to support and inform Medicare beneficiaries, the Balanced Budget Act (BBA) (1997) requires the reporting of health plan–level disenrollment rates. To satisfy this requirement, the Center for Medicare & Medicaid Services (CMS) not only reports plan disenrollment rates on www.medicare.gov but also provides information on *why* people left plans. Disenrollment rates are calculated from CMS’ enrollment results and then are paired with information on the most important reason for leaving a plan, collected via the Medicare CAHPS® Disenrollment Reasons Survey.

Table 1 provides an example of how this information is displayed at www.medicare.gov.

Debate exists over both the relative role that market factors and member dissatisfaction play in explaining voluntary disenrollment rates (Rector, 2000; Riley, Ingber, and Tudor, 1997; Schlesinger, Druss, and Thomas, 1999) and the suitability of disenrollment rates as a valid indicator of plan quality (Dallek and Swirsky, 1997; Newhouse, 2000; Rector, 2000; Riley, Feuer, and Lubitz, 1996; Schlesinger, Druss, and Thomas, 1999; US GAO, 1998). The U.S. Government Accounting Office (GAO) issued a report in October 1996 urging public disclosure of disenrollment rates to help Medicare beneficiaries choose among competing plans (US GAO, 1996). In later testimony to the U.S. Senate, the GAO reiterated the value of disenrollment information as an indicator of health plan quality (US GAO, 1997).

Table 1
Percentage of plan members who left their Medicare managed care plan and
the general reasons why for the year 2001

Health plans	Most important reasons why members chose to leave		Total percentage of members who chose to leave
	Members left because of health care or services	Members left because of costs and benefits	
Average in the United States	5%	6%	11%
Average for the State of Alabama	14%	7%	21%
H0151: United HealthCare of Alabama, Inc.	13%	6%	19%
H0154: VIVA Medicare Plus	3%	1%	4%

A number of possible explanations for disenrollment have been identified. Reese (1997), for instance, suggests a link between rates of disenrollment and the magnitude of out-of-pocket costs, such as premiums and copayments. Burstin and colleagues (1998/1999) point to problems with discontinuity of care as the driving motivator behind an individual opting to leave for a different health plan. Empirical studies have consistently shown a strong association between the decision to leave a health plan and an individual's satisfaction with his care (Rossiter et al., 1989; Sainfort and Booske, 1996; Lewis, 1992). However, in the study by Schlesinger et al. (1999), findings suggest that although disenrollment rates are often used as measures of quality of care in report cards, the dissatisfied do not always disenroll, because this is too costly—especially for those in poor health and those enrolled in HMOs (vs. fee-for-service [FFS]).

Several studies have examined the relationship between voluntary disenrollment and beneficiary characteristics (e.g., Boxerman and Hennelly, 1983; Meng et al., 1999; Riley, Ingber, and Tudor, 1997; Virnig et al., 1998). For example, Riley, Ingber, and Tudor (1997) found that voluntary disenrollment rates are higher among Black and other not non-Hispanic Caucasian beneficiaries and dually eligible beneficiaries than other beneficiaries. Further, they found that disenrollees to FFS are much less healthy (as measured by death rates) than disenrollees to other MMC plans.

Other studies have addressed the association between plan dissatisfaction and beneficiary characteristics (e.g., Druss et al., 2000; Riley, Ingber, and Tudor, 1997; Rossiter et al., 1989; Schlesinger, Druss, and Thomas, 1999). Evidence suggests that persons opting to join Medicare Managed Care (MMC) plans are disproportionately poor and minority, and disproportionately less likely to have Medigap coverage (Thorpe and Atherly, 2002). Moreover, minority beneficiaries represent a disparately large percentage of the Medicare disabled (CMS ORDI,

June 2002). Because significant health disparities and different patterns of health care use exist for racial/ethnic minorities, these subgroups represent particularly important populations to examine in the context of Medicare disenrollment (Langwell and Moser, 2002). Also, the Medicare disabled population is currently about 14 percent of beneficiaries, and the numbers of Medicare disabled persons is expected to grow by about 3 million over the next 30 years, as the entire Medicare population doubles (CMS ORDI, June 2002). Therefore, understanding the experiences of disabled persons in MMC is important as CMS implements managed care throughout the Medicare population.

Although the literature cited above is sizeable and growing, there is little or no published literature to date explaining variation in the observed reasons for leaving Medicare HMOs, or differences among subgroups in their reasons for leaving. There is also little or no published research explaining observed variation in disenrollment rates across different MMC plans. This report contributes to the literature in both dimensions: beneficiary-level analysis and plan-level analysis of the determinants of voluntary disenrollment from MMC plans. A unique aspect of the work presented here is the comprehensive analysis of the multifaceted contextual environment in which beneficiaries make choices, including person-specific, plan-specific, and market or neighborhood-specific variables.

Based on the 2000 and 2001 estimates from CMS' administrative data and the Consumer Assessment of Health Plans (CAHPS®) Disenrollment Survey, the national voluntary disenrollment rate from MMC plans in 2000 and 2001 was stable at about 11 percent. The aim of the analysis in this report is to better understand the determinants of this rate, by expanding the scope and breadth of the analysis over what was conducted for the 2000 survey. The 2000 analysis was primarily descriptive. In the 2001 analyses, we conducted both descriptive and multivariate analyses, employing several different levels of analysis, using several measures of outcomes and characteristics of the complex MMC environment. Following a conceptual model describing the environment in which beneficiaries make choices, one level of analysis is the beneficiary, another is the plan.

The rest of this introductory chapter contains background information about the rationale for study of the Reasons Survey data; information about how voluntary disenrollee survey responses were coded into outcome variables for subsequent analysis (for both the 2000 and 2001 surveys); a summary of findings from the 2000 survey analysis; and following a brief description of our conceptual model, an overview of the 2001 analyses and research questions to be addressed in this report.

1.1 Rationale and Purpose of the Study of Medicare CAHPS® Disenrollment Reasons Survey Data

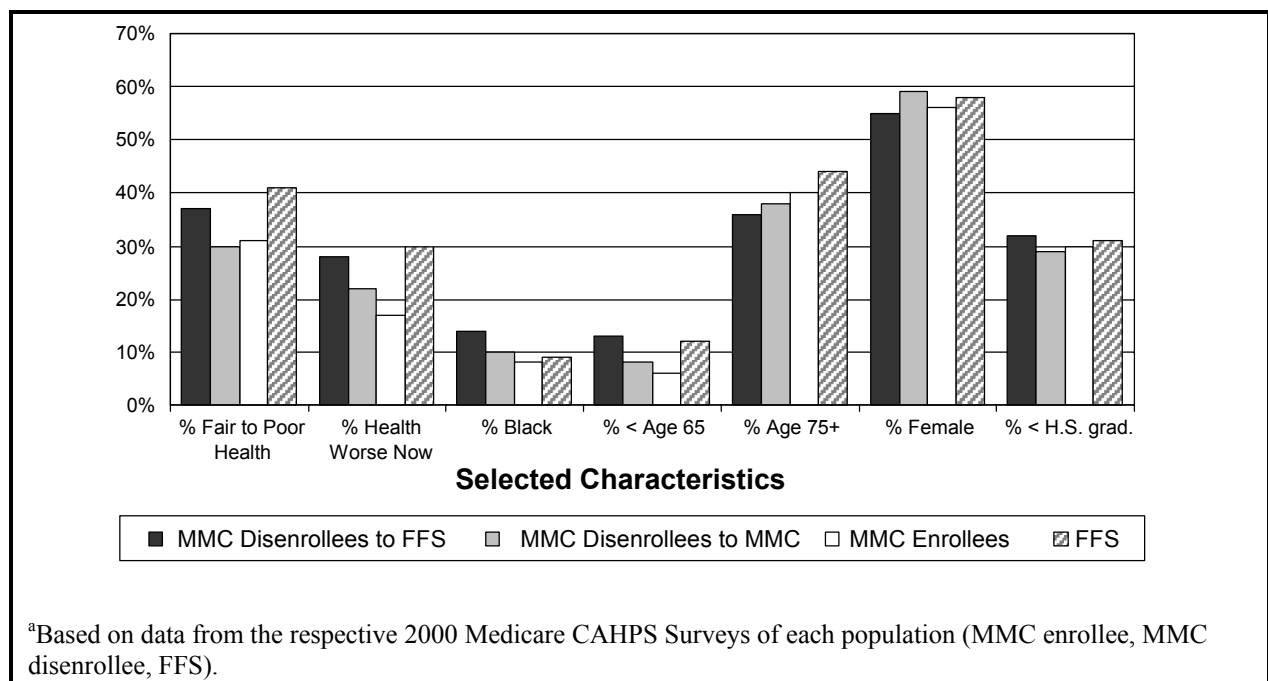
CMS funded the development and implementation of an annual national survey to identify the reasons that beneficiaries voluntarily leave plans, to ensure that disenrollment rates would be meaningful to beneficiaries in health plan choice, to support CMS quality monitoring activities, and to assist in plan quality improvement initiatives. Starting in 2000, CMS began the national implementation of the Medicare CAHPS® Disenrollment Reasons Survey. National public reporting of MMC disenrollment rates began in 2000, and reporting of reasons for disenrollment began in 2002.

The Medicare CAHPS Disenrollment Reasons Survey data are intended for several uses:

- To provide information to help beneficiaries make more informed health plan choices;
- To assist MMC plans and Quality Improvement Organizations (QIOs) to identify areas in which they can focus their quality improvement activities; and
- To enable CMS to monitor MMC plan performance at different geographic levels and for individual plans.

Data gathered by CMS from the three CAHPS[®] surveys show that Medicare beneficiaries whose health is fair to poor, whose health has worsened in the past year, who are Black, and who are non-elderly disabled (i.e., less than 65 years old) are disproportionately leaving MMC plans and are going to FFS (see **Figure 1**). The Medicare CAHPS Disenrollment Reasons Survey data can shed light on the reasons these and other beneficiaries leave.

Figure 1
MMC voluntary disenrollees to FFS, MMC voluntary disenrollees to MMC, MMC enrollees, and FFS beneficiaries: Key characteristics in 2000^a



1.2 Two Ways to Look at Reasons for Voluntary Disenrollment

This report includes two different ways to measure beneficiaries' reasons for disenrollment: (1) All Reasons each survey respondent gave for leaving and (2) each survey respondent's Most Important Reason (MIR) for leaving. For purposes of analysis, individual survey responses to both the All Reasons and Most Important Reason survey questions were assigned to a set of eight more general categories of reasons for leaving. These eight categories or "reason groupings," (and the abbreviated labels we use to refer to these groupings) are:

1. problems with information from the plan (Plan Information);
2. problems getting doctors you want (Doctor Access);
3. problems getting care (Care Access);
4. problems getting particular needs met (Specific Needs);
5. other problems with care or service (Other Care or Service);
6. premiums or copayments too high (Premium/Costs);
7. copayments increased and/or another plan offered better coverage (Copayments/Coverage); and
8. problems getting or paying for prescription medicines (Drug Coverage).

The eight All Reasons groups are derived from responses to the following Medicare CAHPS Disenrollment Reasons Survey questions: (1) 33 preprinted reason items (i.e., Did you leave health plan X for reason Z...?) and (2) one two-part "other reasons" fill-in item (i.e., Were there other reasons... if so please describe them.)² Respondents could choose as many of the 33 preprinted reasons as desired. Factor and variable cluster analyses were applied to the 33 preprinted reasons to find items that were highly associated, and the result of those analyses formed the basis for a final determination of the eight All Reasons groupings. Each of the 33 preprinted reasons and responses to the "other reasons" question was assigned to one of the eight All Reasons groupings. A respondent was assigned to a particular All Reasons grouping if he/she cited at least one survey item that belonged to that reason grouping or had an "other reason" code that belonged to that reason grouping. Respondents could be assigned to multiple All Reasons groupings depending on how many of the 33 individual items they cited and the distribution of those items across the eight reason groupings.

By contrast, the MIR groups are derived from a single survey response item—the single most important reason variable, created from responses to this Medicare CAHPS Disenrollment Reasons Survey fill-in survey question: "What was the one most important reason you left health plan X?" The same eight-reason groupings scheme used for the All Reasons groups was initially used for assigning specific survey responses to the Most Important Reason item into a smaller set of eight aggregated categories. A respondent was assigned to only one of the eight

²A copy of the entire 2001 Medicare CAHPS Disenrollment Reasons Survey is provided in **Appendix A**.

MIR groupings on the basis of the coding of the single Most Important Reason item the respondent gave on the questionnaire. Subsequently, for consumer reporting, these eight MIR groups were collapsed further into the five MIR groups used in some of the analyses.

These two different reasons groupings, which capture different dimensions of the choice environment, are described and compared in some detail in **Chapter 3** of this report. Both sets are used as outcomes in the descriptive beneficiary-level analysis, which is reported in **Chapter 4** and in **Appendix C, Table Series A, B, and C**.

1.3 Major Findings From the 2000 Subgroup Analysis

The CAHPS 2000 Voluntary Disenrollment Reasons Survey subgroup analysis report contains findings from analyses of the 2000 survey (Harris-Kojetin et al., 2002). These analyses were primarily descriptive in nature and contained no multivariate analysis.

Among all reasons cited by disenrollees for leaving a plan, the most frequently cited reasons in 2000 were Copayments/Coverage issues (55 percent), Premium/Costs (54 percent), Doctor Access (41 percent), and Plan Information problems (38 percent).³ Between approximately one-quarter to almost one-third of disenrollees cited Drug Coverage issues (31 percent), Care Access problems (29 percent), or Other Care or Service problems (27 percent), or problems getting Specific Needs met (23 percent). However, numerous differences were found among subgroups of beneficiaries regarding their reasons for leaving. Subgroup differences occurred most frequently for Plan Information problems, Care Access problems, problems getting Specific Needs met, and Premium/Costs issues.

Disenrollees reporting a greater number of outpatient visits and non-elderly disabled disenrollees cited the largest number of items from the list of 33 problems, followed by disenrollees who reported that their health had worsened in the past year, or being in poorer health, and disenrollees hospitalized within 90 days of disenrolling to FFS.

Vulnerable Medicare populations (poorer health status, those needing more care, dually eligible, and non-elderly disabled) were more likely than others to cite a host of access-related problems (Care Access, Plan Information, Drug Coverage), citing multiple All Reasons for leaving their MMC plans. These populations may have left MMC plans because they had special needs for care and/or information about how to get care that were not being met within their plans.

The non-elderly disabled disenrollees were more likely than other disenrollees to cite concerns about costs and benefits among their reasons for leaving. Less vulnerable beneficiaries, such as those who are non-Hispanic Caucasians, more educated, or not eligible for Medicaid, were more likely to cite Doctor Access problems as a reason for leaving.

³**Table 3** in **Chapter 3** shows the assignment of specific responses from the Medicare CAHPS® Disenrollment Reasons Survey to the eight reason groupings examined in this report. **Appendix B** describes the background and statistical methods used to identify appropriate groupings of reasons.

Beneficiaries who left MMC plans within a few months after enrolling—a subgroup more likely (than those who stayed longer) to cite Plan Information problems and Care Access as a reason for leaving—may not have understood how the plan worked before joining. In addition to the vulnerable subgroups already mentioned, Black and Hispanic disenrollees were more likely than others to cite Plan Information problems as a reason for leaving. Those who cited Plan Information problems were more likely to disenroll to FFS, perhaps due to a lack of understanding about how managed care worked.

The two reasons most frequently cited as Most Important Reasons for leaving the plan were Premium/Costs (31 percent), and Doctor Access problems (27 percent); each were cited by almost a third of all voluntary disenrollees. The remaining six Most Important Reason groupings were cited by 10 percent or fewer voluntary disenrollees: Drug Coverage issues (10 percent), Copayments/Coverage (10 percent), Plan Information (8 percent), Care Access (7 percent), Other Care or Service problems (5 percent), and problems getting Specific Needs met (3 percent).

Many of the differences that appeared among subgroups in the All Reasons groupings did not appear when looking only at the Most Important Reasons for leaving a plan. Only a few differences existed in the Most Important Reasons for leaving cited by subgroups of disenrollees. Most subgroup differences occurred for those whose Most Important Reasons for leaving was due to Doctor Access problems or Premium/Costs issues.

Those disenrollees whose Most Important Reasons for leaving was premium- or cost-related were more likely to choose another managed care plan (possibly because they were seeking a lower cost option and could not find it in FFS), had been in the plan for a while before leaving (and thus, likely left the plan primarily for cost rather than access reasons), and chose to leave either at the beginning of the calendar year or at the end (possibly after looking at the latest annual cost information on competing plans in the area).

The report on the 2000 survey concluded that, if managed care is to be a means of providing more comprehensive benefits for poor and minority beneficiaries, there may be a need to address the information and access problems that the more vulnerable disenrollees encountered with MMC plans.

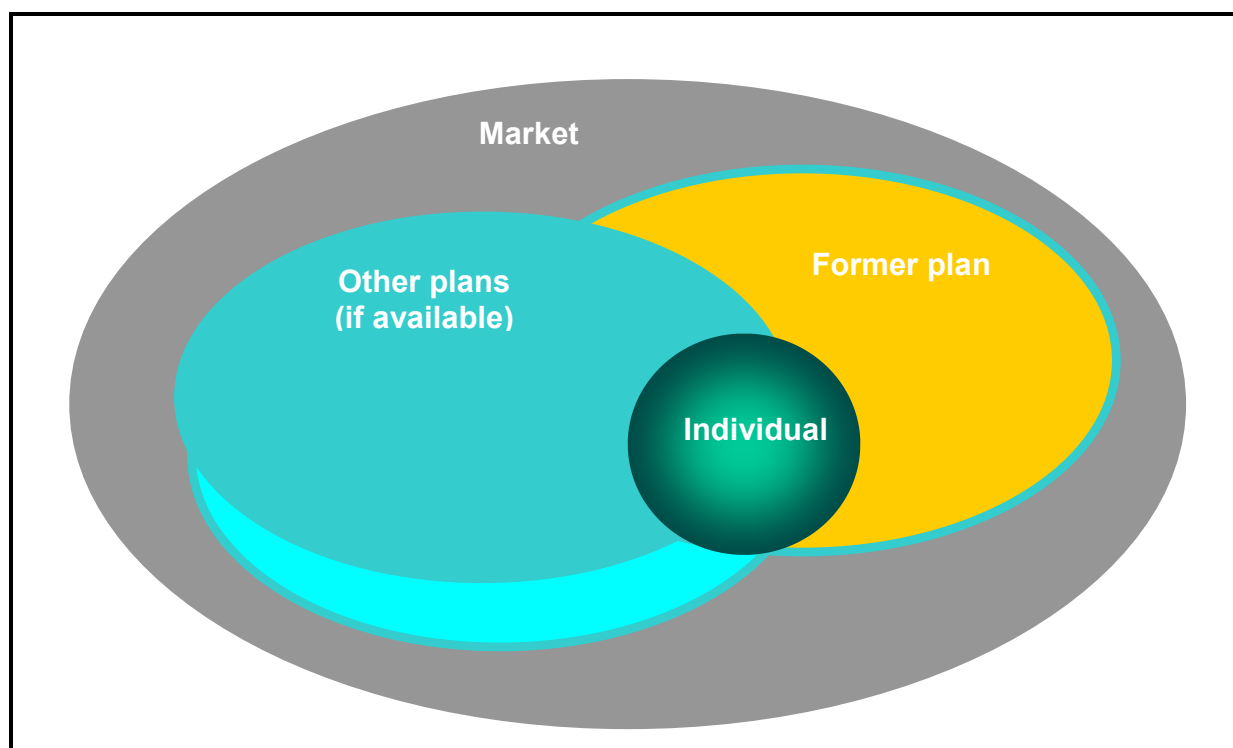
1.4 Conceptual Model

Analysis of Medicare Fee-for-Service CAHPS® (MFFS-CAHPS) data finds variations in ratings across different population subgroups: by age, race/ethnicity, income, education, and health status (RTI, 2003). These findings often mirror results from Medicare Managed Care CAHPS® (MMC CAHPS) (Barents Group, 2003), which suggests that variations in human factors have consistent effects irrespective of the type of health care plan. However, it is well known that humans and human conditions tend to cluster geographically, like to like. Further, there is well-established literature that finds that race or ethnicity per se is not often a significant predictor of health outcomes, when other community level factors are taken into consideration (Pickett and Pearl, 2001; Porell and Miltiades, 2002). Until neighborhood, market, or other spatial dimensions are included specifically in analyses, we cannot know definitively whether variation in reasons with (for example) race is actually due to race, or some other factors that exist in the places where racial enclaves cluster. Furthermore, in the Barents Group report

(2003), market attributes and plan benefits (which vary by level of market competition) are found to be important factors for determining MMC-CAHPS satisfaction ratings. This evidence contributes to the argument that market climate effects, which can vary considerably with geography, are important components to consider in understanding the variation in elderly satisfaction and dissatisfaction with care.

To fully model the complex environment that influences beneficiary reasons for disenrollment, we considered beneficiary-level variables, variables that may be important in their neighborhood or healthcare market, and variables describing the plan from which they disenrolled. The conceptual model with these three levels of variables is illustrated in **Figure 2**. The next step was to find available data that could be used to capture the various levels of effects. We identified dozens of available variables measuring aspects of markets and plans in many, and overlapping, ways.

Figure 2
Conceptual model of the context for plan disenrollment



The next challenge was to narrow the field of possible variables to a small set, which fully captured all aspects of the choice environment. First, we looked broadly at the highest level of aggregation in the conceptual model—the market—and chose those variables with the greatest ability to discriminate between “problem” and “other” geographic regions. The identification of “problem” regions is described in the market analysis (**Appendix D**). Additional information about the subsets of variables chosen for the analyses is provided in **Chapter 3**. These variables were chosen to capture all aspects of the decision environment encompassed in the conceptual model (**Figure 2**).

1.5 Analyses to be Conducted/Research Questions to be Answered with the 2001 Survey

In this report, we describe the findings from two sorts of analyses: beneficiary-level and plan-level. Examining these levels allows us to answer important research questions, shedding light on different perspectives of the complex beneficiary choice decisions.

The objective of the beneficiary-level subgroup analysis is to determine whether beneficiaries with different health status, health insurance, health care utilization, and sociodemographic characteristics choose to leave MMC plans for different reasons. To meet this objective, as described in **Chapter 4**, we conducted both descriptive and multivariate analyses to address four main research questions:

Descriptive Beneficiary-level Analysis:

1. For each **reason grouping**, which subgroups of MMC plan voluntary disenrollees are more likely than other disenrollees to leave?
2. For each **subgroup of MMC plan voluntary disenrollees**, for what reasons are they more likely than other disenrollees to leave?

Multivariate Beneficiary-level Analysis:

3. Are beneficiaries in some **subgroups of MMC plan voluntary disenrollees** more likely to cite **specific reasons** for disenrollment, once confounding contextual factors are held constant statistically?
4. What plan and market characteristics are associated with beneficiaries citing specific reasons for disenrollment, and how do these contextual factors interact in their influences on beneficiary decisions?

Multivariate Plan-level Analysis:

For the multivariate plan-level analysis, described in **Chapter 5**, the three main research questions are the following:

1. Are higher voluntary **plan disenrollment rates** associated with citing specific types of reasons? With citing more reasons?
2. Do high **MMC plan voluntary disenrollment rates** suggest problems with access or quality of care for certain beneficiaries?
3. What plan and market characteristics are associated with beneficiaries leaving plans?

In the next chapter of this report (**Chapter 2**), we describe the Disenrollment Reason survey methods and results. **Chapter 3** addresses variable development and contains tables of variables and sample statistics. **Chapters 4 and 5** contain the methods and empirical results from the beneficiary and plan levels of analysis. **Chapter 6** contains a summary of all results and a section on limitations and directions for future research.

CHAPTER 2

SURVEY METHODS AND RESULTS

2.1 Survey Methods

Although data were analyzed on an annual basis, the 2001 Reasons Survey was conducted on a quarterly basis to determine the *reasons* Medicare beneficiaries leave their MMC plans. A sample of Medicare beneficiaries who disenroll during one quarter is selected at the beginning of the next quarter, with data collection taking place over the next 4 months. The target population for the 2001 Reasons Survey consisted of Medicare beneficiaries who *voluntarily* left an MMC plan during calendar year 2001. The Reasons Survey was administered as a mail survey with telephone follow-up of nonrespondents. Data collection for the survey took place from June 2001 through July 2002.

The sampling frame for the 2001 Reasons Survey consisted of all Medicare beneficiaries who had voluntarily disenrolled from one of 196 MMC organizations and continuing cost contracts. To be included in the sample, MMC health plans were required to have contracts in effect on January 1, 2000; that is, they must have been in operation for at least 1 full year prior to the beginning of the survey. The overall sampling goal for the Reasons Survey was to select up to 388 sample members per plan across all four quarters. However, sampling was not uniform across the quarters, since enrollment patterns vary on a seasonal basis. Consequently, sampling for 2001 was based on the overall distribution of disenrollment during 2000. In 2000, disenrollment rates followed a pattern of approximately 20 percent during Quarter 1, 20 percent during Quarter 2, 20 percent during Quarter 3, and 40 percent during Quarter 4. When selecting cases for the 2001 Reasons Survey, if there were not a sufficient number of cases to select in any given quarter, we attempted to make up those cases in subsequent quarters. For some plans, in some quarters, we therefore took a census of disenrollees.

Table 2 presents the sampling window and data collection schedule for the 2001 Reasons Survey.

Table 2
Sampling window/data collection schedule for the 2001 Reasons Survey

Reasons quarter:	Sampling window: (During which beneficiaries disenrolled)	Data collection period
1	Jan–March 2001	Jun–Oct 2001
2	April–June 2001	Aug 2001–Jan 2002
3	July–Sept 2001	Nov 2001–Mar 2002
4	Oct–Dec 2001	Mar–July 2002

2.2 Sample Design and Selection

The data was collected via a mail survey with telephone follow-up of nonrespondents. The Reasons Survey was designed to collect information about the reasons why sample members left their former Medicare managed health care plan. The questionnaire⁴ contained 77 questions, with specific topics as follows:

- Reasons for leaving the health plan;
- Access to doctors and other health care providers;
- Access to hospitals, medical equipment, home health care, etc.;
- Plan costs and benefits;
- Pharmacy benefits;
- Health care plan customer service;
- Experiences with doctors, nurses, and other health care providers;
- Respondent health status and demographic characteristics; and
- Beneficiary knowledge of the appeals process.

The survey instrument was designed to identify sample members who are considered “involuntary” disenrollees and exclude them from the analysis. Reasons for sample member ineligibility in the 2001 survey included the following:

- The sample member never left the MMC plan for any length of time during 2001;
- The sample member moved out of the area where the MMC plan was available;
- The MMC plan stopped serving Medicare beneficiaries in the sample member’s area;
- The sample member was enrolled in the plan without his or her knowledge (for example, by a salesperson or family member); or
- The sample member was accidentally disenrolled from the plan (for example, due to a paperwork or clerical error).

⁴The questionnaire used in Quarters 2–4 of the 2001 Reasons Survey was slightly different from the questionnaire used in Quarter 1, but the differences did not affect the variables used in the analysis reported in this report. A copy of the questionnaire used in Quarters 2–4, along with a summary of the differences between the questionnaires used in Quarter 1 and in Quarter 2–4, are included in **Appendix A**.

In addition, deceased and institutionalized sample members were ineligible for the Reasons Survey.

The telephone survey instrument was designed to mirror the mail survey instrument as closely as possible and was conducted using computer-assisted telephone interviewing (CATI). Both the mail and telephone survey instruments were customized so that they were plan-specific for each respondent. The survey instruments were also translated into Spanish and were available upon request, as either a hard copy questionnaire or as a Spanish-language telephone interview.

We calculated the response rate for each quarter using the following formula:

$$\frac{\text{Number of completed interviews}}{\text{Number of sample members included in the sample} \textit{ minus } \text{those considered ineligible (e.g., institutionalized, deceased, or involuntary disenrollees)}}$$

The final response rate for 2001 was 67.8 percent.

2.3 Nonresponse Analysis and Weighting

2.3.1 Nonresponse Analysis

We conducted nonresponse analysis on the 2001 Reasons Survey data after the data were cleaned. For this analysis, we classified sample members as respondents or nonrespondents; response propensities were then modeled using logistic regression in SUDAAN. We simultaneously added to the model demographics, census region, address variables, dual eligibility status, and design variables, and removed them in a backwards-stepwise fashion. We also included two-way interactions and explored transformations of the continuous variable (age), keeping variables with p-values of 0.20 or less. The final logistic regression model contained the independent variables—age, race, dual eligibility, census region, address type (post office or rural route) and the design variables (health plan and quarter).

The response propensity analysis showed that those who were older and non-White were less likely to respond to the survey. Those under age 65 were also less likely to respond. Beneficiaries who were *not* dually eligible were more likely to respond. Beneficiaries with addresses that contained a post office or rural route were less likely to respond to the survey. After taking other factors in account, the odds of obtaining a response were roughly the same across the census regions with the exception of the East North Central (WI, MI, IL, IN, OH) and Mountain regions (MT, ID, WY, UT, CO, AZ, NM), which had a higher response propensity.

2.3.2 Disenrollee Design Weights

The predicted response propensities were used to adjust the initial design-based weights upward for respondents so that they represented both respondents and nonrespondents; weights for nonrespondents were set to zero. The general approach used to adjust weights for nonresponse is described by Folsom (1991) or Iannacchione, Milne, and Folsom (1991).

For the purposes of nonresponse adjustments, persons who provided information on eligibility status were treated as respondents. Subsequently, those who were ineligible (deceased, institutionalized, involuntary disenrollees, etc.) were given a weight of zero. Since we do not know the eligibility status of nonrespondents, this approach allows the sample to estimate the proportion ineligible among the nonrespondents based on the respondent sample.

Two sets of weights were constructed for the Reasons Survey. The first weight (referred to as Disenrollment weights) represents all eligible disenrollees in each plan and was developed as discussed above. The disenrollment weights were used in the analysis described herein, as well as for reporting survey results to health plans and Medicare QIOs. The second weight is simply scaled by a plan-level multiplicative constant so that the weights sum to the proportion that voluntary disenrollees represent of the total population of enrollees. These latter weights (referred to as enrollment weights) were used for weighting results for public reporting that are based on all members in a plan rather than just disenrollees.

CHAPTER 3

VARIABLE CREATION, VARIABLES, AND SAMPLE STATISTICS

3.1 Variable Creation for the Beneficiary-level Analysis

3.1.1 Outcome Variable Creation

To gather information about the reasons for leaving MMC plans, the Disenrollment Reasons Survey asked beneficiaries to indicate all of their reasons for leaving the sampled plan. Beneficiaries were asked to indicate whether or not each of 33 preprinted reasons was a reason why they chose to leave their plan. Respondents could cite multiple reasons for leaving. They were then asked to indicate if they had any other reasons for leaving their plan. If so, they were prompted to write in the reason(s) using an open-ended format. These reasons were coded using a coding scheme similar to the preprinted list of reasons. The responses to the preprinted reasons and the coded other reasons were combined to create the All Reasons variables. Beneficiaries were also asked to write in an answer to the following question: “What was the one Most Important Reason you left [*sample plan name inserted here*]?” The responses to these two open-ended questions were coded using the same coding scheme used for the other reasons.

Analyzing and reporting data on each of the 33 individual reasons for all MMC organizations in a state or region would likely create an overload of information and be difficult to interpret since very few beneficiaries cited some of the reasons. Consequently, CMS decided to use groupings of reasons for comparative data displays in reports prepared for consumers and health plans. The analyses presented in this report are also based on groupings of reasons. **Appendix B** describes the background and statistical methods used to identify appropriate groupings of reasons. As a result of a series of factor and variable cluster analyses, we developed eight reason groupings: five groupings that address problems with care or service and three groupings that address concerns about plan costs.⁵ **Table 3** shows the assignment of reasons survey items and labels to the reason groupings.⁶ Each of the eight dichotomous outcome (grouping) variables for the subsequent analyses within this report signifies whether or not a respondent cited a reason for leaving assigned to that grouping.

⁵For reporting to consumers, three groupings (problems getting care, problems getting particular needs met, and other problems with care or service) are combined under the label “Getting care” and two other groupings (premiums or copayments too high and copayments increased and/or another plan offered better coverage) are combined under the label “Premiums, Copayments, or Coverage.”

⁶In addition to the preprinted reasons, there were two other reasons that were only collected when respondents cited them as their Most Important Reason for leaving a plan (i.e., these two reasons were not among the preprinted reasons and thus were not included in the individual level analysis upon which we based the groupings: “insecurity about future of plan or continued coverage” and “no longer needed coverage under the plan.”) The team manually assigned these two reasons to appropriate groupings.

Table 3
Assignment of reasons for leaving a plan to groupings of reasons

		Disenrollment weighted percentage	
		All Reasons	Most Important Reasons ^a
Concerns about costs and benefits			
Plan Information problems	Given incorrect or incomplete information at the time you joined the plan	10.4	0.6
	After joining the plan, it wasn't what you expected	25.8	0.2
	Information from the plan was hard to get or not very helpful	14.4	0.2
	Plan's customer service staff were not helpful	15.2	3.7
	Insecurity about future of plan or about continued coverage	...	0.5
Doctor Access problems	Plan did not include doctors or other providers you wanted to see	28.9	14.9
	Doctor or other provider you wanted to see retired or left the plan	15.4	9.1
	Doctor or other provider you wanted to see was not accepting new patients	5.1	0.1
	Could not see the doctor or other provider you wanted to see on every visit	12.8	0.4
Care Access problems	Could not get appointment for regular or routine health care as soon as wanted	10.6	0.1
	Had to wait too long in waiting room to see the health care provider you went to see	9.3	0.1
	Health care providers did not explain things in a way you could understand	7.6	0.1
	Had problems with the plan doctors or other health care providers	14.0	5.1
	Had problems or delays getting the plan to approve referrals to specialists	13.5	1.6
	Had problems getting the care you needed when you needed it	18.1	1.9
Specific Needs problems	Plan refused to pay for emergency or other urgent care	6.9	0.3
	Could not get admitted to a hospital when you needed to	2.6	1.6
	Had to leave the hospital before you or your doctor thought you should	2.4	0.1
	Could not get special medical equipment when you needed it	3.0	0.1
	Could not get home health care when you needed it	2.2	0.1
	Plan would not pay for some of the care you needed	15.7	1.5

(continued)

Table 3
Assignment of reasons for leaving a plan to groupings of reasons (continued)

		Disenrollment weighted percentage	
		All Reasons	Most Important Reasons ^a
	Concerns about costs and benefits		
Other Care or Service problems	It was too far to where you had to go for regular or routine health care	6.7	2.5
	Wanted to be sure you could get the health care you need while you are out of town	6.4	0.5
	Health provider or someone from the plan said you could get better care elsewhere	7.8	1.4
	You, another family member, or friend had a bad experience with that plan	10.9	0.6
Premium/ Cost Issues	Could not pay the monthly premium	29.1	16.3
	Another plan would cost you less	39.7	2.5
	Plan started charging a monthly premium or increased your monthly premium	39.9	13.3
Copoly/ Coverage Issues	Another plan offered better benefits or coverage for some types of care or services	40.1	4.7
	Plan increased the copayment for office visits to your doctor and for other services	25.1	1.1
	Plan increased the copayment that you paid for prescription medicines	26.2	0.7
	No longer needed coverage under the plan	...	2.8
Drug Coverage issues	Maximum dollar amount the plan allowed for your prescription medicine was too low	21.6	4.1
	Plan required you to get a generic medicine when you wanted a brand name medicine	9.4	0.8
	Plan would not pay for a medication that your doctor had prescribed	13.0	3.5

^aPercentages based on those who supplied a most important reason or for whom one was imputed. The most important reasons was missing for eight percent of respondents.

3.1.2 Subgroup Variable Creation

We selected 18 subgroup variables from items available on the Disenrollment Reasons Survey and/or available from CMS administrative records. In addition to variables that identify the subgroups of Medicare beneficiaries traditionally considered to be particularly vulnerable, we also examined specific types of disenrollees, e.g., those disenrolling to another managed care plan versus those disenrolling to FFS coverage. The subgroup variables chosen for this analysis

fall into four main categories: health status, health insurance characteristics, other disenrollee characteristics, and sociodemographic variables.

- The disenrollee **health status variables** include: beneficiaries' reports of their health status, health status compared to a year ago, combined health status and 1-year health status change (created from the previous two survey items), and number of outpatient visits in the past 6 months.
- The **health insurance variables** include: dual eligibility status (derived from the state buy-in indicator from CMS administrative records as a proxy for Medicaid enrollment) and non-elderly disabled status (using age as a proxy).
- **Other disenrollee variables** include: choice of coverage after disenrollment, length of time in plan before disenrollment, new personal doctor, whether received information on how to file a complaint, answers to questions about problems getting care, and quarter in which the disenrollee left their plan.
- Disenrollee **sociodemographic variables** include: race and ethnicity, education, and gender.

All subgroup variables described above (except dual eligibility status, choice of coverage after disenrollment, and quarter in which the disenrollee left their plan) are based on respondent-reported survey responses. The nonsurvey-based variables come from the CMS Enrollment Data Base (EDB). Frequency distributions for these subgroup variables are provided in **Table 4**.

Table 4
Description of categorical subgroup variables, n=24,495

Variables	Disenrollment weighted percentage
Health status characteristics	
Self-assessed health status	
Excellent	8
Very good	27
Good	35
Fair	23
Poor	7
Self-assessed health status compared with 1 year ago	
Better now	19
About the same	58
Worse now	23

(continued)

Table 4
Description of categorical subgroup variables (continued)

Variables	Disenrollment weighted percentage
Combined health status and 1-year health status change	
Excellent to good health that is same or better	63
Excellent to good health that is worse	7
Fair or poor health that is same or better	15
Fair or poor health that is worse	15
Number of outpatient visits in the 6 months before disenrollment	
None	11
1 to 3	49
4 or more	40
Health insurance characteristics	
Dual eligibility status	
Yes	15
No	85
Age	
64 or younger	10
65 to 69	25
70 to 74	27
75 to 79	20
80 or older	18
Choice of coverage after disenrollment	
Another managed care plan	46
Fee-for-service	54
Other disenrollee characteristics	
Frequency of disenrollment in 2000	
More than once	14
Once	86

(continued)

Table 4
Description of categorical subgroup variables (continued)

Variables	Disenrollment weighted percentage
Length of time in plan before disenrollment	
Less than 6 months	11
6 months or more	89
Sampling quarter when disenrollee left plan	
1 st : January – March 2001	26
2 nd : April – June 2001	20
3 rd : July – September 2001	17
4 th : October – December 2001	37
New personal doctor	
Yes	37
No	63
Proxy interview	
Yes	7
No	93
Received information on how to file a complaint	
Yes	25
No	75
Getting care	
Yes	18
No	82
Satisfaction of plan	
0 – worst	6
1	2
2	3
3	4

(continued)

Table 4
Description of categorical subgroup variables (continued)

Variables	Disenrollment weighted percentage
Satisfaction of plan (continued)	
4	5
5	17
6	7
7	9
8	17
9	9
10 – best	20
Sociodemographic characteristics	
Race and ethnicity	
Hispanic	11
Non-Hispanic Caucasians	74
Non-Hispanic black or African-American	11
Non-Hispanic other	5
Education	
8th grade or less	12
9th – 11th grade	16
High school graduate/GED	32
Some college/2-year degree	24
Bachelor's degree or more	15
Gender	
Male	44
Female	56

3.1.3 Other Variables

Other variables at the plan and market level, described as plan-benefit variables, plan-specific variables, and market-level variables, are listed below, and described more fully in **Tables 5 and 6**.

- **Plan benefit variables** include: premium, inpatient copayment, Primary Care Provider (PCP) office visit copay, drug coverage, and dental coverage.⁷
- **Plan specific variables** include: for-profit versus non-profit ownership, years of operation, plan's CAHPS rating, plan's primary care provider turnover rate, number of MMC enrollees in plan, and plan's market share of the Medicare market in their service area.
- **Market level variables** include: MMC county payment rate for the aged, MMC penetration rate in 2000, change in MMC penetration from 1998–2000, level of private HMO+PPO penetration 2001, percentage of population living in urban areas, percentage of population above age 65, proportion of population aged 65–74 in population above 65, percentage of households with elder householder and less than \$30,000 annual income in 1999, percentage of households with elder householder and less than \$15,000 annual income in 1999, percentage of population underserved by primary care providers in 2001, physicians per 1,000 elderly, and percentage of physicians in an area accepting Medicare assignment.

3.1.4 Sample Size

While the sampling frame includes 32,890 observations, 6 percent of the questionnaires were deemed ineligible or incomplete, and 5 percent of respondents were eliminated because their employer no longer offered the health plan in question. In addition, 13 percent of respondents represented beneficiaries who disenrolled from their plan to join the Tricare for Life program in fall 2001; their data were not analyzed. (This was a one-time opportunity for the subset of beneficiaries eligible for military benefits to sign up for a very comprehensive benefit package.) After removing these observations from the sampling frame, the nationally representative analytic sample for 2001 included 24,495 Medicare beneficiary respondents who voluntarily disenrolled from 196 MMC organizations during 2001. For the Most Important Reason analyses, cases were excluded if no Most Important Reason was given or could be imputed, resulting in 22,470 observations for analysis. For the All Reasons analyses, only 23,958 of the 24,495 cases are included in the analysis (some cases were lost due to missing plan-level variables). For the descriptive subgroup analysis, some of the 24,495 available cases were excluded if they had missing data on the subgroup variable. (For this reason, sample sizes vary by table in **Appendix C**.) For the analytic files, subgroup variables were imputed using hotdeck imputation. (**Table 4** shows the frequency distributions of the sample on the subgroup variables as a result of these imputations.)

⁷Additional information about the source and creation of these plan-benefit variables is provided in **Section 3.2.2**.

Table 5
Variables used in beneficiary-level logistic regression analyses,
with disenrollment-weighted sample statistics, n = 24,495

Plan-level and market-level variables				Disenrollment-weighted sample statistics			
Variable name	Variable description	Units in which data are expressed	Source/date	Min	Mean	Max	Sdev
IAGE	Age group	1 = 64 or younger ^a 2 = 65 to 69 3 = 70 to 74 4 = 75 to 79 5 = 80 or older	Missing imputed from CMS EDB, 2001				
IGENDER	Gender	1 = Male 2 = Female ^a	Missing imputed from CMS EDB, 2001				
IEDUC	Education level	1 = 8th grade or less 2 = Some high school, but did not graduate 3 = High school graduate or GED 4 = Some college or 2- year degree 5 = 4-year college graduate 6 = More than 4-year college graduate ^a	Missing imputed by hot-deck method using sample data				
IRACE_ETH	Race/ethnicity	0 = Hispanic 1 = Non-Hispanic Caucasian ^a 2 = Non-Hispanic Black/African-American 3 = Non-Hispanic Other	Missing imputed by hot-deck method using sample data				
IOVRALLHL	Health status	1 = Excellent 2 = Very good 3 = Good 4 = Fair 5 = Poor ^a	Missing Imputed by hot-deck method using sample data				
IHLTHPLAN	Satisfaction with health plan	0 to 10 = Worst to best	Missing imputed by hot-deck method using sample data				
MCAID	Dual eligibility	1 = Yes 0 = No	CMS EDB, 2001	0	0.15	1	1.63
MNG_Care	Whether disenrolled to another managed care plan of FFS	1 = disenrolled to another managed care plan 0 = disenrolled to FFS plan	Disenrollee sample data, 2001	0	0.46	1	2.25

(continued)

Table 5
Variables used in beneficiary-level logistic regression analyses,
with disenrollment-weighted sample statistics, n = 24,495 (continued)

Plan-level and market-level variables				Disenrollment-weighted sample statistics			
Variable name	Variable description	Units in which data are expressed	Source/date	Min	Mean	Max	Sdev
MDSHORT01	Physician shortage: percentage of population underserved by primary care providers, by state	1%	AARP, 2001: <i>Reforming the Health Care System: State Profiles 2001</i>	2.7%	8.45%	27%	20.14%
XPOOR	Elderly poverty: proportion of households with elderly householder with annual income below \$15,000, by county	10%	U.S. Bureau of the Census, 1999	0.10	0.25	0.53	0.28
XURBAN	Measure of urban intensity: percentage of county population living in an urban area, by county	10%	U.S. Bureau of the Census, 2000	0.00	0.92	1.00	0.53
MSHAREPLAN	Plan's Medicare market share in their service area, by plan service area	10%	CMS Geographic Service Area File, 2001	0.00	0.09	0.24	0.23
YEARSOP	Plan tenure: number of years plan has been in operation	5 year	CMS Monthly Enrollment Report, 2001	1.00	11.37	24.00	20.90
HMOPPO01	Private managed care penetration: the combined penetration of HMOs and PPOs in the private insurance market, by state	10%	InterStudy, 2001	0.49	0.64	0.84	0.21
DRUGSOME	Whether plan offered drug coverage	0 = No drug coverage 1 = Some drug coverage	CMS Administrative Files, 2001	0	0.79	1	1.85

^aReference category.

3.1.5 Address Matching for Market Data

Prior to including contextual variables reflecting the beneficiary's market characteristics, we needed to have an accurate county code for every beneficiary at the time the disenrollment decision was made.⁸ To determine whether the beneficiary's address matches the service area covered by their plan, we used the 2001 Geographic Service Area (GSA) file provided on CMS's website and the 2001 zip code to Federal Information Processing Standards (FIPS) crosswalk and a 2002 Social Security Administration (SSA) code to FIPS crosswalk. First, we looked for plan ownership changes and consolidations, and obtained accurate geographic service areas for all plans based on date of disenrollment. We used an updated beneficiary address file provided by CMS and first matched beneficiaries to their plan's service areas using their county of residence. For the remaining unmatched records, we did additional matching based on zip code of residence—people who were outside the contract service area were assigned the county closest to their zip code if their zip code was within 20 miles of a contract service area. This has left 100 observations with no known valid address. Next, we used the 2001 GSA file to define groups of counties in plan service areas. These county groups were used to create averages for market data over the counties served by the plan, which were then assigned to beneficiaries based on the plan contract number.

3.2 Variable Creation for the Plan-Level Analysis

The primary outcome variable in this analysis was the plan-level disenrollment rate for 2001 as reported by CMS on the www.medicare.gov site. CMS calculates these rates based on enrollment records by determining the total number of beneficiaries who left an MMC coordinated care plan during 2001 and dividing this number by the total number of enrollees in the plan at any time during 2001:

$$\frac{\text{Number of beneficiaries who leave plan voluntarily during year}}{\text{Cumulative annual enrollment}}$$

This unadjusted voluntary disenrollment rate was subsequently adjusted based on data from the 2001 CAPHS Disenrollment Reasons Survey to account for other beneficiaries who CMS considered to be involuntary disenrollees. In addition to accounting for those who left a plan due to death or moving out the plan's service area, we also adjusted the rates for the percentage of beneficiaries who reported leaving because their employer stopped covering the plan or, in 2001, the percentage who were eligible for and accepted a one-time opportunity to enroll in TriCare For Life (a very generous health coverage program for current and former members of the armed forces and their families).

Disenrollment rates were calculated by CMS from CMS enrollment files for each managed care organization (MCO) with an MMC contract. The term MCO is used throughout **Chapter 5** in place of the term "plans," because in MMC terminology, the term "plan" refers to

⁸Initial address information was based on information in CMS' Enrollment Database. This address (used for the initial survey mailings) did not necessarily reflect each disenrollee's location when they left their plan. Thus, the county codes for these initial addresses did not always reflect a valid county/contract combination.

a specific set of benefits offered for a particular premium (i.e., one MCO may offer more than one “plan”).

Other variables used in this analysis were compiled from a number of different sources and are described in the next sections.

3.2.1 Variables from the Medicare CAHPS® Disenrollment Reasons Survey

The Disenrollment Reasons Survey was the source of two types of data used in this analysis: disenrollment reasons and beneficiary characteristics. As previously described, there are two main sources of disenrollment reasons in the Disenrollment Reasons Survey: yes/no responses to preprinted reasons and open-ended responses to a question regarding the Most Important Reason for leaving. Only the former type of reasons was used in this analysis. Each of these reasons was assigned to one of eight reasons groupings; consequently, for each individual respondent, each reason grouping variable was assigned a value of one if the individual had cited any reason in that grouping and a zero otherwise. To create MCO-level reasons variables for each reason grouping and each MCO, we summed the number of individuals who had cited a reason in that grouping and divided that number by the total number of survey respondents for that MCO. This process was used to create the following MCO-level variables:

- Percentage of disenrollees citing any reason in the Doctor Access group
- Percentage of disenrollees citing any reason in the Plan Information group
- Percentage of disenrollees citing any reason in the Care Access group
- Percentage of disenrollees citing any reason in the Other Care Or Service group
- Percentage of disenrollees citing any reason in the Specific Needs group
- Percentage of disenrollees citing any reason in the Premium/Costs group
- Percentage of disenrollees citing any reason in the Copayments/Coverage group
- Percentage of disenrollees citing any reason in the Drug Coverage group

Individual-level survey responses regarding beneficiary characteristics were aggregated to the MCO-level in a similar manner (based on counts of positive responses divided by total respondents) to derive the following variables:

- Percentage under 65 (non-elderly disabled)
- Percentage reporting poor or fair health
- Percent who did not graduate high school
- Percentage not non-Hispanic Caucasian

- Percentage Hispanic
- Percentage dually eligible (Medicaid)

Three other variables whose original source was CMS administrative files (rather than survey responses) were constructed in a similar manner from the Disenrollment Reasons Analysis file:

- Percentage leaving for another MMC plan
- Percentage leaving during 1st and 4th quarters
- Percentage leaving after less than 3 months

3.2.2 Benefit/Premium Variables

For MMC beneficiaries in 2001, CMS' administrative files only maintained the contract (H) number for each beneficiary, not the specific benefit plan in which an individual was enrolled. Consequently, to include information on benefits and premiums in this analysis, it was necessary to assign benefits based on just one of the plans offered by each MCO. In reporting on levels of coverage across beneficiaries, CMS uses an algorithm that assumes that beneficiaries are enrolled in the most generous but least expensive plan available to them. We followed this same rule to assign each beneficiary to a specific benefit plan offered by their MCO in the county to which they were assigned (see **Section 3.1.5** for a description of address matching). Once a specific plan was assigned to each beneficiary, a series of benefit and premium variables were constructed for each benefit plan represented by one or more Disenrollment Reasons survey respondent. The source of these variables was the benefits descriptions in the 2001 Medicare Compare database. To facilitate tabulation at the MCO level, each benefit and premium variable was constructed at the individual beneficiary level as a dichotomous variable (i.e., the benefit/premium level specified applied or did not apply, meaning premiums either were greater than \$50 per month, or premiums were less than or equal to \$50 per month). Using this approach, the same straightforward process used for the reasons variables could be applied to aggregate the data to the MCO level. Consequently, at the MCO level, each benefit/premium variable represents the percentage of disenrollees with the particular benefit/premium level in question.

Due to the need to estimate the level of coverage, rather than report on the actual coverage that each disenrollee had prior to leaving a plan, the benefits variables selected were designed to provide a general overview of coverage rather than specific coverage details. Furthermore, specific coverage variables were selected for inclusion in the analysis based on several factors, such as:

- Extent of variation across plans;
- Relative frequency of utilization of the underlying services; and
- Our prediction of their perceived importance to beneficiaries.

The list of premium and benefit variables included in the analysis included the following:

- Percentage of disenrollees who paid no monthly premium
- Percentage of disenrollees who paid premiums higher than \$50 per month
- Percentage of disenrollees subject to inpatient copayments, either per stay or per day (assuming a stay of 2 days) of less than \$200
- Percentage of disenrollees subject to office visit copayments greater than \$20 per visit
- Percentage of disenrollees with some level of coverage for dental services beyond that offered by original Medicare
- Percentage of disenrollees with no coverage for prescription drugs
- Percentage of disenrollees with some level of coverage for brand-name drugs
- Percentage of disenrollees with unlimited coverage for generic drugs

3.2.3 Other Variables

Other variables used in this analysis were derived from a number of different sources including the 2001 Medicare Compare database, the December 2001 version of the MMC Geographic Service Area file, Health Plan Employer and Data Information Set (HEDIS) data submitted to CMS for the 2001 contract year, and other data in a file created by RTI. These variables, their sources, and additional notes about the construction of the variables are provided in **Table 6**.

Table 6
Other variables used in the MCO-level analysis of disenrollment rates,
n = 163 unless noted otherwise

Variable	Source, n	Notes	Min	Mean	Max	Sdev
1999 CAHPS plan rating—percentage of enrollees rating plan 7 or less on 0–10 scale	2001 Medicare Compare, n = 142	This plan rating reflects the data available to beneficiaries who were considering disenrollment during the majority of 2001 on www.medicare.gov or via the 1-800-Medicare hotline.	5.0%	35.0%	17.3%	5.5
Years in business	CMS HEDIS data: 2001, n = 146	Total years in business (not just MMC)	1	16.8	56	11.1
Primary care provider turnover	CMS HEDIS data: 2001, n = 141	Percentage of primary care providers who were affiliated with plan as of 12/31/00 but who were not affiliated as of 12/31/01	0.0%	12.9%	80.0%	13.0
No. of MMC enrollees in MCO (2001)	Medicare Managed Care Geographic Service Area file, December 2001		570	32892	453081	52912
MMC penetration (2000)	Medicare Managed Care Geographic Service Area, December 2000	Average of county-level MMC penetration rates in MCO's service area	3.0%	27.6%	51.0%	12.5
Change in MMC penetration (1998–2000)	Medicare Managed Care Geographic Service Area File, 1998-2000	Average change in MMC Penetration for each county in the MCO's service area	–13.0%	2.9%	12.5%	3.5
Average MMC payment (2001)	Medicare Managed Care Geographic Service Area file, December 2001	Average MMC payment rate for counties in MCO service area	\$475	\$568	\$781	\$76
Percentage of population ≥ 65	Census 2000	Average of county-level percentages for counties in MCO's service area	7.1%	12.8%	22.2%	2.6
Percentage 65–74 as percentage of population ≥ 65	Census 2000	Average of county-level percentages for counties in MCO's service area	47.0%	52.1%	61.7%	2.3

(continued)

Table 6
Other variables used in the MCO-level analysis of disenrollment rates (continued)

Variable	Source	Notes	Min	Mean	Max	Sdev
Percentage of households with householder ≥ 65 , that have $< \$30,000$ annual income (1999 dollars)	Census 2000	Average of county-level percentages for counties in MCO's service area	31.5%	46.5%	61.9%	5.9
Physicians per 1,000 elderly	Area Resource File	Average of county-level rates for counties in MCO's service area	6.5	19.9	45.0	6.4
Percentage of population underserved by primary care physicians in 2001	AARP, 2001: <i>Reforming the Health Care System: State Profiles 2001</i>	Average of state-level percentages for states in MCO's service area	2.7%	9.4%	27.0%	4.4
Percentage of physicians who accept Medicare assignment	AARP, 2001: <i>Reforming the Health Care System: State Profiles 2001</i>	Average of state-level percentages for states in MCO's service area	74.0%	88.5%	97.0%	4.4
Profit status	2001 Medicare Compare	Whether MCO was organized as a for profit (= 1) or not-for-profit (= 0) entity.	0	0.62	1	0.48

CHAPTER 4 BENEFICIARY-LEVEL ANALYSIS AND RESULTS

4.1 Descriptive Subgroup Analysis

As portrayed in the conceptual model (**Figure 2**), the factors which motivate a Medicare beneficiary to enroll or to disenroll from a given health plan are multifaceted. A variety of complicated and interrelated issues play a role in this decision, including costs, provider availability, patient provider communication, benefit packages, access issues, and bureaucratic impediments. To assess and evaluate the most prevalent explanations for Medicare HMO disenrollment in 2001, the survey solicited information about a wide array of potential reasons for leaving a particular insurance plan. These causes or rationales for disenrollment were then classified into eight groupings:

1. Plan Information problems;
2. Doctor Access problems;
3. Care Access problems;
4. Specific Needs problems;
5. Other Care or Service problems;
6. Premium/Costs issues;
7. Copayments/Coverage issues; and
8. Drug Coverage issues.

These eight clusters were (initially) used for both the All Reasons and Most Important Reason (MIR) groupings. These groupings were described earlier in the report (**Chapters 1 and 2**). **Section 4.1.1** below discusses the insights gained by examining the six most commonly cited explanations for disenrollment among the 33 preprinted reasons. **Section 4.1.2** contains more descriptive details about the various reason groupings, comparing and contrasting the All Reasons and the MIR. **Section 4.1.3** contains a selective summary of the most meaningful of the descriptive subgroup analysis results with full results contained in a series of **Tables (A, B, C)** included in **Appendix C**.

4.1.1 Top Six Reasons

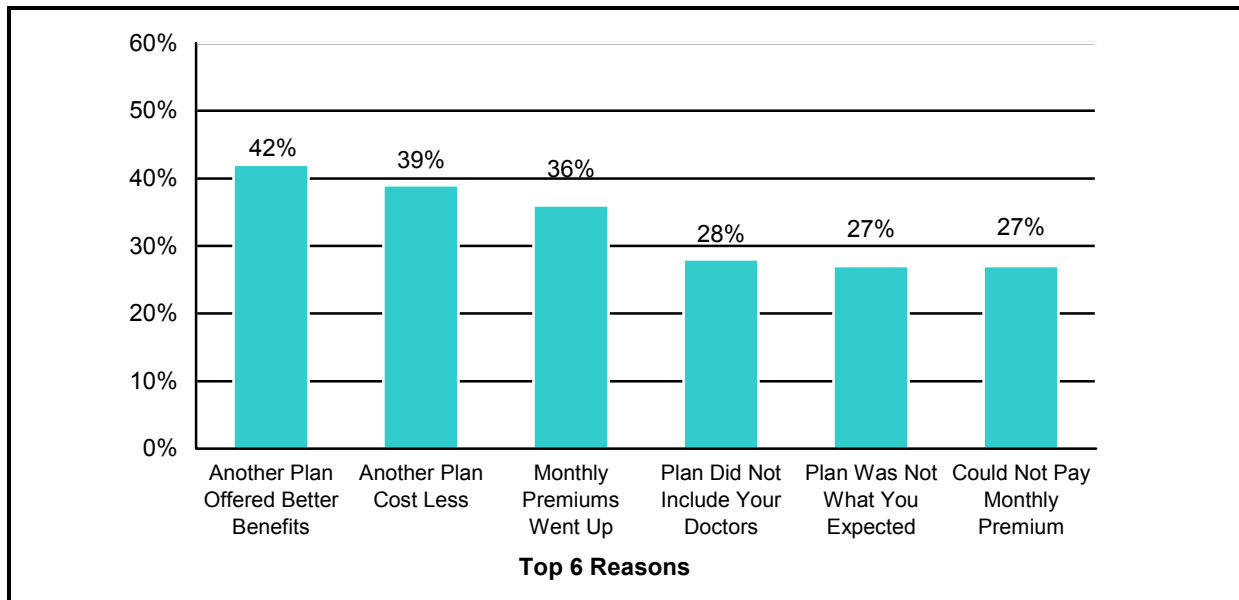
These Top Six Reasons represent the most prevalent of the 33 underlying All Reasons items. It may be important to have this perspective when interpreting the multivariate results, as some reasons may be driving the grouping in which they are included. The Top Six are displayed in **Figure 3**, and in bold in **Chapter 3, Table 3**, where we see that three of the All Reasons groups may primarily be driven by a single question, summarized here in **Table 7**.

Table 7
Reasons for disenrollment, and associated drivers

Reason	Driver
Plan Information	“After joining the plan, it wasn’t what you expected”
Doctor Access	“Plan did not include doctors or other providers you wanted to see”
Copayments/Coverage	“Another plan offered better benefits or coverage for some types of care or service”
Premium/Costs	All component questions

In **Table 7**, we see that one of the All Reason groups (Premium/Costs) is composed entirely of some of the most prevalent reasons, making it the most prevalent of the All Reasons. This most prevalent reason—Premium/Costs issues—is also the most prevalent for the analogous cluster category in the MIR. Thus, the two different reasons groupings (All Reasons and MIR) do agree in that, whichever is used, cost reasons are the most important factors in determining why beneficiaries disenrolled.

Figure 3
Top six reasons cited from among all 33 preprinted reasons, 2001



4.1.2 Differences in the Reasons Groupings

Although the All Reasons and Most Important Reasons variables show agreement in the importance of costs in beneficiary disenrollment decisions, these variables do reflect different

types of information. The Most Important Reason expresses the beneficiary’s primary reason for leaving a plan while the All Reasons also provide accompanying or secondary reasons. Consequently, for the purposes of informing beneficiaries about their health plan options, the Most Important Reason appears to be the appropriate variable to report. Since most respondents cited more than one All Reason, the All Reasons variables tend to include a larger set of reasons for disenrollment at the respondent level (than the Most Important Reason variable). These All Reasons are generally, but not always, inclusive of the Most Important Reason for an individual or set of individuals.

Figure 4 displays the frequencies for the All Reasons groupings. **Figure 5** displays the frequencies for the MIR, and **Figure 6** compares the two after standardizing the All Reasons.

4.1.3 Descriptive Results: Tables A, B, and C

In this section, we present the results of the bivariate subgroup analyses, in each case presenting first the results of the larger set of All Reasons followed by the result of the more focused Most Important Reason variable, and then the Top Six Reasons tables derived from the 33 All Reasons items. The Series **Tables A, B, and C** in **Appendix C** all summarize different information about Reasons for disenrollment. In a nutshell:

- **Series A tables**—features cross-tabulations between the reasons groupings for **All Reasons** and various subgroup variables
- **Series B tables**—features cross-tabulations between the reason groupings for the **Most Important Reason** and various subgroup variables
- **Series C tables**—features the reason groupings for the **Top Six Reasons** and various demographic variables

Series A, Series B, and Series C tables. In the Series A tables (All Reasons), each row corresponds to a possible reason (grouping) for disenrolling. These reason variables are dichotomous, demanding either a “yes” or “no” answer from a survey respondent.

Each cell in the table(s) indicates a weighted percentage estimate (using disenrollment weights, described in **Section 2.3**) of the proportion of the sample which cited a given reason for disenrolling. Since respondents could cite as many reasons as they wished, a given respondent could have referenced many different explanations for disenrolling. This flexibility explains why the percentages for each of the eight All Reasons variables (the column totals) often sum to over 100 percent. In the Series B tables, the row variable (Most Important Reason) is a single variable that is cross-tabulated against the various levels (pooled and unpooled) of the subgroup variables. With the MIR question, each respondent was limited to giving a single response, which was then assigned to one of the eight reason groupings. Therefore, each column in the Series B tables sums to 100 percent, give or take a percent or two (due to rounding). Finally,

Figure 4
Distribution of disenrollment: All Reasons

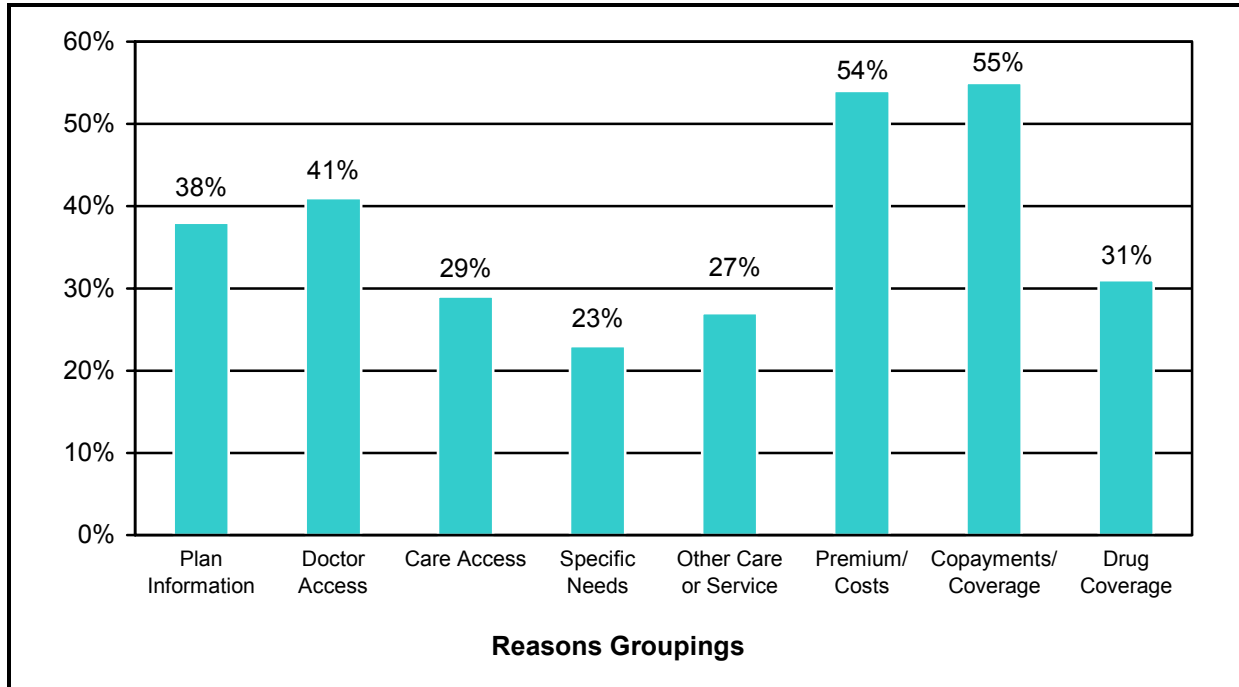


Figure 5
Distribution of disenrollment: Most Important Reasons

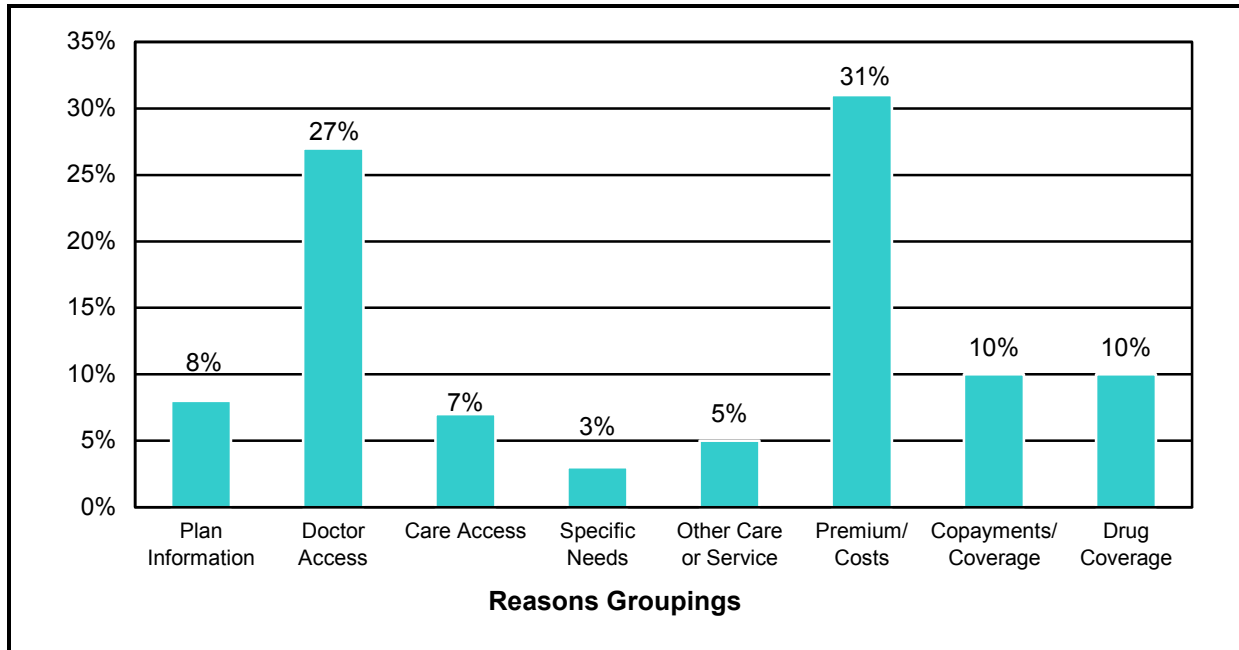
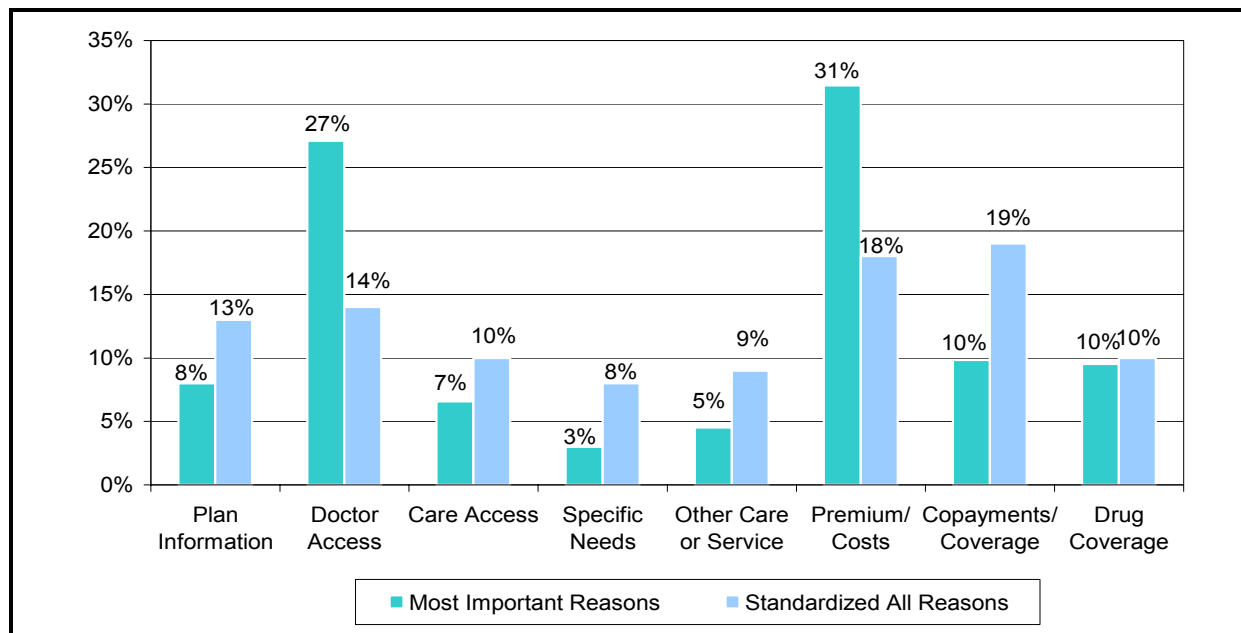


Figure 6
Comparison of (standardized) All Reasons and MIR groupings



tables arranged in Series C illustrate the relationships between the Top Six reasons individual cited when asked for factors motivating their decision to disenroll. Each row represents one of the six reasons with the highest percent of respondents indicating them as a reason for leaving their plan. Columns in this series may sum to over 100 percent because respondents were able to cite as many reasons as applicable.

Unpooled and pooled subgroup variables. The subgroup variables in the tables are presented in two different breakdowns. On the far right portion of each table are columns for the more detailed set of responses (unpooled) for the variable. To the left of these columns are two or occasionally three columns that collapse various categories of the more detailed response set. The pooled results present a slightly simpler conceptualization of the subgroup variable. In a few tables where the full response set for the subgroup variable has only a few categories, no pooled grouping is provided.

All 24,495 observations were included in the analysis unless they had missing values for the applicable dependent or subgroup variable (on a table-by-table basis). The actual percentages appearing in the tables are based on disenrollment-weighted cell frequencies. All significance testing done on the tables took into account this weighting, and was done using Proc Crosstab in SUDAAN.

Statistically significant and meaningful differences. We performed separate chi square tests for the pooled and unpooled versions of each subgroup variable to identify statistically significant associations between the reason groupings and the subgroup variables. Statistically significant differences of at least 10 percentage points were deemed “meaningful” and are designated with the dagger symbol (†) in each series of tables.

Series A tables: All Reasons. When analyzing Series A tables, we examined the descriptive statistics for the 2001 Survey, keeping in mind findings in the data from 2000, to allow assessment of trends from 2000 to 2001. The most meaningful findings regarding the fundamental explanations for Medicare HMO disenrollment are presented below, first addressing national trends in All Reasons cited from 2000 to 2001, followed by a reason-by-reason description of the population groups more likely to report particular problems.

National trends in All Reasons: 2000–2001. Between 2000 and 2001, the fundamental reasons cited for disenrolling from a Medicare HMO remained remarkably stable. Financial concerns continued to dominate. In 2001, the most frequently cited reasons for leaving a plan were Premium/Costs issues (57 percent), a 3 percent increase from the previous year. Next, 54 percent of survey respondents blamed Copayments/Coverage issues for their disenrollment, a 1 percent drop since the CAHPS 2000 Survey. Complaints about Care Access dropped slightly from 41 percent (2000) to 40 percent (2001); and Plan Information problems fell as well, from 38 percent (2000) to 35 percent (2001). **Figure 7** compares the frequency of All Reasons cited in 2000 and 2001.

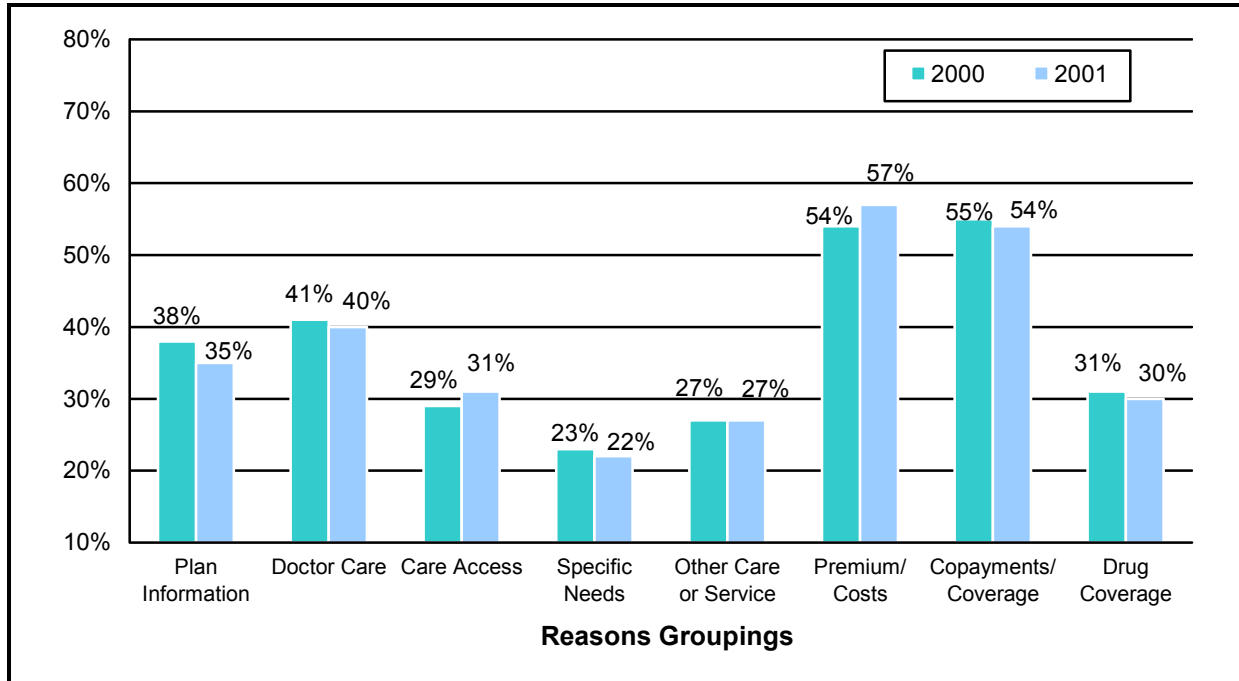
(All Reasons) Plan Information problems. “Plan Information problems” may encompass a variety of situations, including being given incorrect or incomplete information when joining the plan, having a hard time getting information, finding that the plan was not what it initially seemed, and finding customer service staff at the plan to be unhelpful. Certain types of people appeared to experience Plan Information problems serious enough to motivate their decision to leave the plan. Specifically, certain subgroups of disenrollees cited Plan Information problems to varying degrees.

Among the following subgroups of individuals, a notable proportion expressed particular concern with “Plan Information” and pointed to it as a reason for leaving their MMC plan: non-elderly disabled individuals, Hispanics, beneficiaries with no more than an 8th-grade education, beneficiaries reporting worse health, dually eligible individuals, rapid disenrollees (within 6 months of enrollment), disenrollees within the first three quarters of the year, and disenrollees who went to FFS.

(All Reasons) Doctor Access problems. Beneficiaries with some college were more likely to state these types of problems than beneficiaries with no more than an 8th grade education. Beneficiaries with more outpatient visits, or those who are not dually eligible, were also more likely to state this problem.

(All Reasons) Care Access problems. Care Access problems include an array of access and communication issues: not getting an appointment for regular or routine health care as soon as the beneficiary wanted, having to wait too long in the waiting room for an appointment, having a health provider who did not explain things in an understandable way, having problems getting care when it was needed (including difficulty locating plan doctors or other health care providers that suit your needs), and facing problems or delays getting plan approval for specialist referrals.

Figure 7
National-level percent of All Reasons cited: 2000 and 2001



The following groups of disenrollees were more likely to cite problems with getting care as a reason for leaving: non-elderly disabled individuals, Hispanics, beneficiaries in worse health, dually eligible disenrollees, disenrollees who went to FFS, and disenrollees who reported getting a new personal doctor.

(All Reasons) Specific Needs problems. These problems included the plan not paying for needed care; not being able to get special medical equipment, home health care, or admitted to the hospital; or having to leave the hospital sooner than the beneficiary or doctor thought appropriate. The non-elderly disabled and persons reporting poor health were more likely to cite these types of reasons.

(All Reasons) Other Care or Service problems. Other Care or Service problems included having or hearing of a bad medical experience with the plan, having trouble getting to appointments, being concerned about getting care when away, and having someone suggest that better care might be available elsewhere. Hispanic persons or persons reporting the worst health were more likely to cite these types of reasons.

(All Reasons) Premium/Costs issues. This cluster includes several items: the beneficiary could not pay the monthly premium, another plan would cost the beneficiary less, or the plan increased its monthly premium. Objections to the expense of health care and health insurance commonly drove MMC members to disenroll from their HMOs. Sometimes, individuals could not afford their monthly premium obligations or could not afford recent premium increases. Other beneficiaries chose to disenroll to join a different health plan which would cost less. In

these cases, the other plan may have had lower premiums, lower copayments, or a lower combination of premiums and copayments.

The following groups were more likely than others to cite the costliness of premiums or copayments as a reason for disenrolling: non-elderly disabled individuals, dually eligible disenrollees, non-rapid disenrollees, disenrollees from the last quarter of the year, and beneficiaries who disenrolled only once.

(All Reasons) Copayments/Coverage issues. The non-elderly disabled or persons with the greatest number of outpatient visits were more likely to state reasons in this cluster.

(All Reasons) Drug Coverage issues. These problems include the plan not paying for a prescribed medicine, being required to buy generic instead of brand-name medicines, and finding the maximum allowable dollar amount for medicines to be too low. The non-elderly disabled, those reporting the worst health, and those with the greatest number of outpatient visits were more likely to state this reason.

Series B tables: Most Important Reason (MIR). When analyzing Series B tables, we examined the descriptive statistics for the 2001 Survey, keeping in mind findings in the data from 2000, to allow assessment of trends from 2000 to 2001. Findings regarding the fundamental explanations for Medicare HMO disenrollment are organized below as follows: national trends in MIR cited from 2000 to 2001, followed by a reason-by-reason description of the population groups more likely to report particular problems.

National trends in Most Important Reasons. Among the MIRs cited for leaving a plan, percentages were consistent across years. For example, the most frequently cited reason for disenrollment in 2000 was Premium/Costs issues (31 percent). In 2001, 33 percent cited Premium/Costs issues as their reason for leaving their plan. Likewise, 31 percent in 2000, and 26 percent in 2001, said that Doctor Access was the Most Important Reason for disenrollment. Percentages for MIRs in 2000 and 2001 are shown in **Figure 8**.

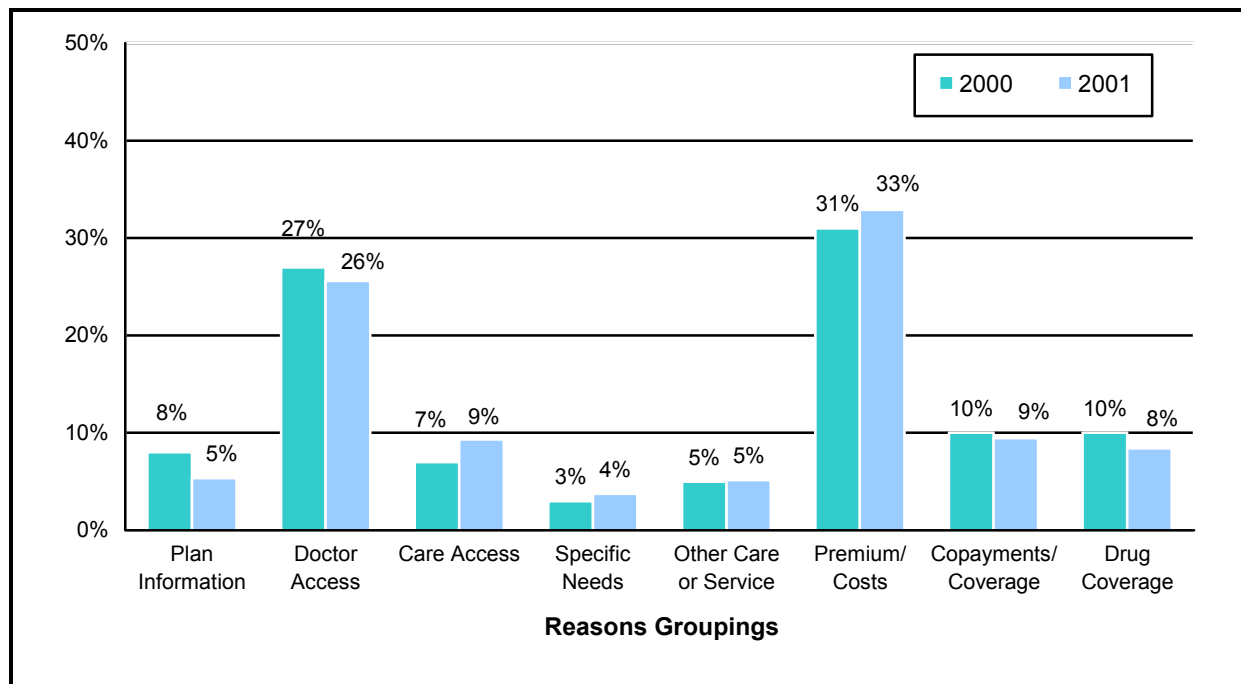
(MIR) Plan Information problems. There were no meaningful differences across the subgroups for this reason.

(MIR) Doctor Access problems. The following groups of disenrollees are more likely than others to cite problems getting particular doctors: disenrollees aged 65 years and over, non-Hispanic Caucasian disenrollees, those with higher educational attainment, disenrollees who were not dually eligible, disenrollees in the second or third quarter of the year, and disenrollees who went to another managed care plan.

(MIR) Care Access, Specific Needs, or Other Care or Service problems. There were no meaningful differences across the subgroups for these reasons.

(MIR) Premium/Costs issues. The following groups of disenrollees were more likely than others to cite Premium/Costs as their Most Important Reason for leaving: non-Hispanic other versus Hispanic disenrollees, disenrollees reporting better health, beneficiaries with no outpatient visits in the past 6 months, beneficiaries who disenrolled after 6 months or longer enrollment, and disenrollees who left their plan in the last quarter of the year.

Figure 8
National-level percent of MIRs cited: 2000 and 2001



(MIR) Copayments/Coverage and Drug Coverage issues. There were no meaningful differences across the subgroups for these reasons.

Series C tables: Top Six Reasons. In analyzing Series C tables, we looked at descriptive statistics for the 2001 data. Since this is the first year we looked at the Top Six Reasons, we were unable to look at trends in the data from 2000 to 2001. These findings are organized by subgroup of interest.

Age. Non-elderly disabled beneficiaries were more likely than those 65 or older to cite “monthly premiums went up” or “plan was not what you expected” or “could not pay monthly premium” as a reason for disenrolling.

Race and ethnicity. Non-Hispanics were more likely than Hispanic disenrollees to cite “monthly premiums went up” as a reason for disenrolling and Hispanic disenrollees were more likely than non-Hispanics to cite “plan was not what you expected” as a reason for disenrolling.

Education. Disenrollees with lower levels of education (8th grade or less) were more likely than disenrollees with a Bachelor’s degree or more to cite “could not pay monthly premium” as a reason for disenrolling.

Self-assessed health status. Disenrollees who assessed their health as “fair to poor” were more likely than those who assessed their health as “excellent to good” to cite “plan was not what you expected” as a reason for disenrolling.

Dually eligible. Disenrollees who were dually eligible were more likely than those who were not to cite “plan was not what you expected,” and more likely to cite “could not pay monthly premium” as a reason for disenrollment.

Number of months in plan before leaving. Rapid disenrollees (5 months or less) were more likely than Non-rapid disenrollees (6 months or more) to cite “plan was not what you expected” as a reason for disenrolling.

Choice of coverage after disenrollment. Those who disenrolled to an MMC plan were more likely than those disenrolling to an FFS plan to cite “another plan offered better benefits,” or “another plan cost less” as a reason for disenrolling. Those who disenrolled to an FFS plan were more likely than those disenrolling to an MMC plan to cite “plan was not what you expected” or “could not pay monthly premium” as a reason for leaving.

In the next sections of this report, we turn to the multivariate analyses, where we can examine the independent effect of each subgroup characteristics, holding constant other subgroup, plan-level, and market-level effects.

4.2 Multivariate Statistical Methods and Results

There are two main research questions of interest in the multivariate beneficiary-level analyses:

- ❖ **Are beneficiaries in some subgroups of MMC plan voluntary disenrollees more likely to cite specific reasons for disenrollment, once confounding contextual factors are held constant statistically?**
- ❖ **What plan and market characteristics are associated with beneficiaries citing specific reasons for disenrollment, and how do these contextual factors interact in their influences on beneficiary decisions?**

As described previously, the All Reasons variables and the MIR variables were created using different methods for extracting information from questions. Respondents could, and often did, give more than one reason that fell into more than one of the All Reasons groups. Since these groups were neither mutually exclusive nor independent, we used binary logistic analysis on each of the All Reasons groups separately. The MIR groups are mutually exclusive, as beneficiaries could only cite one MIR—so we were able to use a generalized (multinomial) logistic regression model (GLM) on these variables. In both the binary logistic and the multinomial logit estimation, we used the disenrollment weights described in **Chapter 2, Section 2.3**. The major difference in the two approaches is that the GLM model estimates all of the MIR groups simultaneously, and accounts for inter-cluster correlation in the multiple beneficiary observations within plans. Another difference is that the binary logistic analyses includes more disenrollees, since some disenrollees did not provide a Most Important Reason.

Selection of variables. We conducted some higher-level, aggregate market area analysis to help determine which of the many possible explanatory variables had the most power to discriminate among places where we observed geographic coincidence of complaints in the MIR.

This was necessary because the empirical model used to examine the MIR contains many parameters, and requires a parsimonious specification. The methods used for market-level analysis are contained in **Appendix D**.

In summary, the market-level analysis suggests that the geographic coincidence of reasons were more pronounced in newer, smaller, emerging managed care markets with lower provider availability and less experienced plans and populations. This suggests that urban intensity was a factor driving the distribution of disenrollment reasons, with certain types of reasons occurring more frequently in more urban areas, and other types occurring more frequently in less urban areas. In the less urban areas, competition among plans was lower, payment rates were lower, the elderly population was poorer, premiums were higher, plan quality was lower in dimensions assessing drug therapies, and plan benefits were less generous, often not including drug coverage. In these smaller markets, establishing managed care networks may be more difficult, due to lower population and provider density (Morrisey and Ashby, 1982; Dranove, Simon, and White, 1998; Grefer et al., 2003). Thus, as managed care markets mature, we may expect to see improvement over time in the observed disparities in disenrollment rate clustering across markets by urban intensity, such as those illustrated in **Table D-1** in **Appendix D**. In the future, the availability of the new PPO option (under the 2003 Medicare PPO Demonstration Project) may help reduce these intra-urban-intensity disparities in disenrollment reasons, as PPOs are not so dependent on dense networks as HMOs (Grefer et al., 2003).

Table 5 in **Chapter 3** describes the final subset of variables chosen for use in the multivariate beneficiary-level analyses. **Section 4.2.1** contains the individual binary logistic analysis methods and results for the All Reasons groups. **Section 4.2.2** contains the multinomial logistic regression methods and results for the MIR.

4.2.1 Model Description and Empirical Estimates From the All Reasons Binary Logistic Model

Individual logit models were estimated separately for each of the eight preprinted Reason groups to investigate the relationships between subgroup variables and Reasons given for disenrollment, while statistically holding constant plan-level and market-level variables that might confound these relationships. The eight All Reasons groups include:

1. Plan Information problems
2. Doctor Access problems
3. Care Access problems
4. Specific Needs problems
5. Other Care or Service problems
6. Premium/Costs issues

7. Copayments/Coverage issues

8. Drug Coverage issues

The descriptive results presented in **Section 4.1** suggest that the most common motivations for disenrolling from Medicare managed care plans in 2001 relate to cost: the two most prevalent reasons for leaving were concerns about premiums and copayments (**Figure 4**). However, close examination of the specific reasons that dominate each multidimensional reason collection suggests that there are particular items that may be “drivers” for some reason groupings (**Table 3, Chapter 3**). That is, while reason groupings may contain five or more reason “members,” it appears that particular members of a grouping overwhelm the others and “drive” the frequency distribution of the eight-reason category scheme.

For instance, the six most often cited “reasons” for disenrolling were the driving forces behind the reasons groupings to which they belong. *Plan Information problems* were being driven by individuals who said their plan was “not what was expected”; *Premium/Costs issues* were primarily dominated by persons who complained about increases in their monthly costs. Finally, *Doctor Access problems* appeared to indicate an inability to see the physicians of one’s choice; it did not reflect office wait times, appointment wait times, or physician communication problems (see **Table 3, Chapter 3**). Although these drivers of these motivations for disenrollment were interesting, to better understand the determinants of disenrollment, we performed a series of multivariate regression analyses that allowed us to account for contextual factors (i.e., market or plan effects) that could have impacted patterns of disenrollment.

Empirical results. The binary logit model expresses the probability that a beneficiary disenrolls for at least one reason within the particular reason group being modeled, as a function of beneficiary and contextual variables. The log of the odds ratio is the parameter of greatest interest in a logistic regression, due to its ease of interpretation.

Table 5, Chapter 3 contains a full description of all the variables used in the logistic analyses, with coding information, units, and information about data sources and year of data. The empirical results from the separate estimation of each binary logistic equation for each of the eight All Reasons are contained in **Table 8**. Due to incomplete coverage by some of the plan-specific variables, the initial sample size of 24,495 (described in **Section 3.1.2**) was reduced to 23,958.⁹ The overall fit of all models is significant at better than the 99 percent level of confidence. Individual variables’ overall significance levels are indicated in the row starting with the variable name, while the significance of categorical effects relative to the omitted

⁹We conducted sensitivity analysis to see whether excluding variables with incomplete coverage, which allowed us to use all available beneficiary-level observations, had a meaningful impact on the results. Losing these 537 observations only caused minor changes in some coefficient estimates, which would not impact the interpretation of results. As a further test of robustness, we excluded about 500 more observations where address information did not directly correspond to a plan’s service area and still found that our empirical results remained generally constant.

Table 8
Empirical results (odds ratios) from the individual logistic regression estimation of each of the eight All Reason groups:
n = 23,958; Overall significance > 99 percent

Reason group→ Variable name↓	Plan Information	Doctor Access	Care Access	Specific Needs	Other Care or Service	Premium/ Costs	Copayments/ Coverage	Drug Coverage
Age	*			*		**	**	**
64 or younger	1.05	1.03	1.20	1.58**	1.10	1.68**	1.30	1.73**
65 to 69								
70 to 74	0.80*	1.11	1.16	1.21	1.15	0.97	1.02	0.95
75 to 79	0.81	1.13	1.33*	1.23	1.22	1.00	1.07	0.96
80+	0.73*	1.17	1.09	1.03	1.23	0.071**	0.76*	0.77*
Gender								
Male	0.90	0.79**	0.94	0.87	0.79**	1.27**	1.08	0.90
Female								
Race & Ethnicity	**	**	**	**	**	**	*	
Hispanic	1.94**	0.83	1.64**	1.07	1.87**	0.83	1.19	1.14
Non-Hispanic Caucasian								
Non-Hispanic black/ African American	1.51**	0.60**	1.21	1.11	1.25	1.42**	0.76*	1.02
Non-Hispanic other	1.21	0.85	0.94	0.83	0.92	1.11	1.27	0.77
Education			*			*		
≤8th grade	1.39	0.72*	0.79	0.80	0.91	1.34*	1.12	1.19
9th – 11th	1.12	0.88	0.93	0.77	0.92	1.29*	1.18	1.03
High school/GED	0.97	0.89	0.70**	0.73*	0.86	1.08	1.00	1.21
Some college	0.98	1.00	0.94	0.77	1.06	0.99	1.23	1.03
BA or more								
Dually Eligible						**		
Yes	1.22	0.63**	1.20	1.16	1.08	1.67**	1.25	1.05
No								

(continued)

Table 8
Empirical results (odds ratios) from the individual logistic regression estimation of each of the eight All Reason groups:
n = 23,958; Overall significance > 99 percent (continued)

Reason group→ Variable name↓	Plan Information	Doctor Access	Care Access	Specific Needs	Other Care or Service	Premium/ Costs	Copayments/ Coverage	Drug Coverage
Health Status	*		**	**			*	**
Excellent								
Very good	1.23	1.07	1.11	1.16	0.91	0.99	1.07	1.29
Good	1.28	1.13	1.22	1.20	1.02	1.02	1.31	1.67**
Fair	1.63**	1.32	1.69**	2.04**	1.08	1.08	1.41*	2.11**
Poor	1.60*	1.37	1.82**	2.14**	1.30	1.30	1.41	2.76**
Disenroll to FFS or MMC	**		**	*				**
MMC	0.59**	0.94	0.66**	0.86*	0.89	0.92	1.12	1.20**
FFS								
Satisfaction with Plan	**	**	**	**	**	**	**	**
0	26.37**	1.69**	23.41**	6.36**	6.84**	0.64**	1.59**	2.79**
1	15.41**	2.38**	30.24**	4.55**	6.27**	0.66	1.66	2.15**
2	19.26**	2.31**	20.49**	5.92**	5.24**	0.95	4.50**	3.20**
3	9.62**	2.17**	12.59**	5.75**	3.39**	1.04	2.73**	2.93**
4	9.64**	1.36	13.34**	4.85**	2.98**	1.33	2.42**	3.29**
5	5.72**	1.31*	8.62**	2.61**	2.13**	1.44**	2.77**	2.16**
6	3.48**	1.22	4.53**	2.68**	2.38**	1.14	2.74**	2.30**
7	2.53**	1.15	3.27**	2.07**	1.57**	1.06	1.86**	1.72**
8	1.53**	0.96	1.87**	1.12	1.09	1.09	1.56**	1.19
9	1.25	0.99	2.05**	1.31*	0.97	0.91	1.33*	1.13
Drug Coverage	**	*	**		**	**		**
No coverage								
Some coverage	1.21**	1.16*	1.45**	0.95	1.28**	0.79**	0.91	1.19**

(continued)

Table 8
Empirical results (odds ratios) from the individual logistic regression estimation of each of the eight All Reason groups:
n = 23,958; Overall significance > 99 percent (continued)

Reason group→ Variable name↓	Plan Information	Doctor Access	Care Access	Specific Needs	Other Care or Service	Premium/ Costs	Copayments/ Coverage	Drug Coverage
Years plan has been in operation	0.97	1.12**	1.11**	0.96	1.05	0.95*	0.97	1.05
Market share of plan	0.84**	0.91*	1.24**	0.88*	1.02	1.08	0.88**	0.71**
Private managed care penetration	0.95	0.98	0.73**	1.38**	1.00	1.00	1.29**	1.40**
Proportion of county that is urban	1.01	1.07*	0.98	1.04	0.91*	0.98	1.08**	1.11**
Proportion of elderly households with low annual income	1.04	1.08	1.01	1.33**	1.04	0.83**	1.19**	1.16**
Proportion of population perceiving a shortage of primary care physicians	1.00	1.05**	0.97**	1.04**	0.99	0.96**	1.02**	1.02**

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

reference groups is indicated in the column next to the numerical estimates for each category. Two asterisks (**) indicate significance at the 99 percent level of confidence, while one asterisk (*) indicates significance at the 95 percent level of confidence. The highlighting in the table rows designates the reference category used for the categorical variables. In the discussion of results, only the statistically significant findings are noted. The subgroup differences discussed below are significant after controlling statistically for plan and market-level factors.

Discussion of results: Reason by reason

Plan Information problems. The older elderly were less likely than the 65–74 age group to cite Plan Information problems. Hispanics and African Americans were more likely to cite Plan Information problems than non-Hispanic Caucasians. People who disenrolled to another MMC plan were less likely to cite information problems. People in fair to poor health were more likely to cite this reason than persons in excellent health. People who were the most dissatisfied with their health plan were more likely to cite information problems. People in plans with some drug coverage were more likely to cite Plan Information problems than people with no coverage. People in plans with a larger market share were less likely to cite information problems.

Doctor Access problems. Males, African Americans, dually eligible persons, and persons with less than a high school education were less likely to cite Doctor Access reasons. People less satisfied with their plan were more likely to cite Doctor Access reasons. Persons with drug coverage and in plans with longer tenure were more likely to cite Doctor Access reasons. People in more urban places or in places with reported physician shortages were more likely to cite Doctor Access reasons. It is interesting to note that health status did not contribute significantly to the probability of citing Doctor Access reasons.

Care Access problems. People aged 75–79 and Hispanics were more likely to cite the access to care reason. People with only a high-school education and those who disenrolled to another MMC plan were less likely to cite the access to care reason. People in fair to poor health were more likely to cite this reason than persons in excellent health. People who were less dissatisfied with their plan and those who had drug coverage were more likely to cite the access to care reason. People in plans with a larger market share or in plans with longer tenure were more likely to cite the access to care reason. People in markets with greater reported shortages of doctors or greater managed care penetration in the private market were less likely to cite the access to care reason.

Specific Needs problems. The non-elderly disabled were more likely than the youngest elderly to cite Specific Needs problems. People with only a high-school education and those who disenrolled to another MMC plan were less likely to cite Specific Needs problems. People in fair to poor health were more likely to cite these types of problems than persons in excellent health. People more dissatisfied with their plan were more likely to cite Specific Needs problems. People in plans with a larger market share were less likely to cite these reasons, while those in markets with greater proportions of impoverished elderly, greater reported physician shortages, and greater managed care penetration were more likely to cite these reasons.

Other Care or Service problems. Males were less likely and Hispanics more likely to cite Other Care or Service problems, than females or non-Hispanic Caucasians. People who were

more dissatisfied with their plan or those who had drug coverage were more likely to cite these reasons. People in more urban areas were less likely to cite these reasons.

Premium/Costs issues. The non-elderly disabled were more likely, and the oldest-old were less likely, to cite Premium/Costs issues than the youngest elderly group. Males, African Americans, and the less-well-educated were more likely than females, non-Hispanic Caucasians, and the better educated to cite these types of reasons. Dually eligible persons were more likely to cite these reasons. People only moderately dissatisfied with their plan were more likely to cite these reasons than the most satisfied persons. People very dissatisfied with their plan were less likely to cite these reasons. Persons with drug coverage, those in plans with longer tenure, those in places with reported physician shortages, and those in the poorer elderly communities were less likely to cite these reasons.

Copayments/Coverage issues. The oldest elderly were less likely than the youngest to cite Copayments/Coverage issues. African Americans were less likely than non-Hispanic Caucasians to cite Copayments/Coverage issues. People giving their plan moderate ratings were much more likely than the satisfied to cite these types of reasons. People in plans with a larger market share were less likely to cite these reasons. People in markets with greater managed care penetration, more elderly in poverty, greater reported physician shortages, or more urban places were more likely to cite these reasons.

Drug Coverage issues. The non-elderly disabled were more likely, and the oldest old less likely, than the youngest elderly to cite these reasons. Persons disenrolling to another MMC plan and those moderately dissatisfied with their plan were more likely to cite these types of reasons. People reporting worse health were more likely to cite these reasons than persons in excellent health. People in markets with greater managed care penetration, more elderly in poverty, greater reported physician shortages, or more urban places were more likely to cite these reasons. People in plans with larger Medicare market shares were less likely to cite these reasons.

Discussion of results: Subgroup by subgroup. Disabled beneficiaries under the age of 65 were more likely than the youngest-elderly group to cite their Specific Needs were not being met, or that Premium/Costs were too high, or that they were having problems getting Drug Coverage. The oldest elderly group was less likely to state problems with Plan Information, Premium/Costs, Copayments/Coverage, or Drug Coverage.

Males were significantly less likely than females to cite Doctor Access or Other Care or Service problems as reasons for disenrolling, and males were more likely than females to cite plan Premium/Costs as a reason for disenrolling. Other reasons showed no significant differences across gender.

Compared to non-Hispanic Caucasians, Hispanics were more likely and African-Americans were less likely to cite Plan Information problems as a reason for disenrolling. Examination of this reason grouping revealed that its primary “driver” was: “plan was not what you expected.” The results also suggest that Hispanics and African Americans were more likely than non-Hispanic Caucasians to reference Care Access and Other Care or Service problems when explaining their decision to disenroll. African Americans were more likely than non-Hispanic Caucasians to disenroll because of Premium/Costs issues.

Beneficiaries with a high school education were less likely to cite problems with Care Access or Specific Needs problems. Beneficiaries with less than 8th grade education were less likely to cite Doctor Access and more likely to cite Premium/Costs. Dual eligibles were more likely to disenroll when their Premium/Costs issues than were individuals who were not dual eligibles, and less likely to disenroll because of access to Doctor Access. The health status variable suggests that people in fair to poor health were more likely than those in excellent health to cite Plan Information, Care Access, Specific Needs problems, and Drug Coverage issues.

Data limitations prevented us from specifically examining beneficiary income as a determinant of disenrollment. We have a proxy measure of income based on the beneficiary's county of residence. Because individuals are likely to live among others of similar circumstances, this variable may help control statistically for income variation among the Medicare population. The findings suggest that the Medicare population living in 'poorer' elderly communities was more likely to cite Specific Needs, Copayments/Coverage, or Drug Coverage problems as reasons for disenrollment. Elderly living in poorer communities were less likely to cite Premium/Costs as a reason.

The remaining group of variables was included to capture essential components of the contextual choice environment, so that beneficiary-level variables could be interpreted "holding all else constant." We found that disenrollees who cited Plan Information problems, Care Access difficulties, and failing to have their Specific Needs adequately addressed were all significantly less likely to disenroll to MMC plans. People citing Drug Coverage as a reason were more likely to disenroll to another MMC plan.

Beneficiary rating of health plan was the most statistically significant, highest impact variable of all included in the model. The most dominant finding was that individuals who were least satisfied with their health plan complained more than more satisfied individuals about Plan Information, Care Access, Specific Needs not being met, and Other Care or Service problems. Less consistent were the findings for Doctor Access problems and issues with Premium/Costs, Copayments/Coverage, and Drug Coverage—people giving more median plan ratings were more likely to cite these reasons for disenrolling than those who gave the highest ratings.

Beneficiaries in plans with some drug coverage (versus none) were more likely to cite Plan Information, Doctor Access, Care Access, Other Care or Service, and Drug Coverage problems, but less likely to cite Premium/Costs, as reasons for disenrolling. Another notable finding is that beneficiaries enrolled in plans with longer tenure in the MMC program were more likely to cite access to Doctor Access and Care Access problems, but less likely to cite Premium/Costs as a reason for disenrollment. Similarly, beneficiaries in plans with a larger share of the Medicare market were more likely to cite Care Access problems. In contrast, as a plan's market share increased, the probability of disenrollment because of Plan Information (unmet expectations) and Doctor Access problems and issues with Copayments/Coverage or Drug Coverage, or because of a plans failure to meet one's Specific Needs, dropped markedly.

The overall level of private managed care penetration in the market was associated with a higher probability of disenrolling because Specific Needs were not met, or because of issues with Copayments/Coverage, or Drug Coverage. Conversely, as overall managed-care penetration rose, there was a smaller probability of disenrollment due to Care Access problems. The

urbanicity variable had a similar coefficient pattern to private managed-care penetration. For instance, the greater the population density where one lived, the more likely a Medicare beneficiary was to disenroll because of better benefits being offered by a different plan (Copayments/Coverage) or because of Drug Coverage issues in a particular plan.

Lastly, the physician shortage variable (measured at the state-level) was a significant predictor for six of eight reasons, with its largest impact being felt on the Doctor Access reasons, which tended to validate the measure as a proxy for physician shortage faced by the elderly. Beneficiaries in states with greater shortages were more likely to cite Doctor Access, Specific Needs, Copayments/Coverage, and Drug Coverage issues, and less likely to cite Care Access and Premium/Costs reasons. It is not surprising that the smaller the ratio of physicians to patients in a given state, the more likely a disenrollee was to cite difficulties with physician access, because the primary issue driving this reason grouping was the inability to see the doctor of your choice.

4.2.2 Model Description and Empirical Estimates from the Generalized Logit Estimation of the MIR

For consumer reporting, the eight reason groups previously described were collapsed into five Most Important Reason (MIR) groups, as follows:

- The “Problems with information from the plan” was kept as the Plan Information category.
- The “Problems getting doctors you want” was kept as the Doctor Access category.
- “Care Access problems” (Care Access), “Problems getting particular needs met” (Specific Needs), and “Other problems with care or service” (Other Care or Service) were collapsed into a general Care category.
- “Problems getting or paying for prescription medicines” was kept as the Drug Coverage category.
- The “Premiums or co-payments too high” and “Co-payments increased and/or another plan offered better coverage” were collapsed into a general Premium & Copays category.

We used the “Premium & Copays” reason as the reference category in the GLM analysis, because it was the most prevalent (see **Figure 8**, where we see that 41 percent of the sample stated a reason in this group). In the multivariate model, each parameter was interpreted as the independent effect of that covariate on choosing Reason A versus the reference (Premium & Copays) reason, holding the effects of other covariates constant. The estimated coefficients (reported in **Table 9**) for the beneficiary-, plan-, and market-variable effects were interpreted as impacts on the odds of choosing some Reason A versus the Premium & Copays reason.

Sample size, variable coding, and standardization. After losing some observations with missing plan-level data or most important reason, there were 22,470 beneficiary-level observations remaining for the analysis. To avoid an over-parameterized model, a significance

level of $\alpha = 0.01$ was chosen for determining model specification, rather than the traditional $\alpha = 0.05$.¹⁰ The final model specification contained 13 main effects (13 of the 15 variables described in **Table 5**), 23 interactions, and 3 squared terms. The empirical results are presented in **Table 9**. For parsimony, we present and discuss some (9), but not all (23) of the interaction effects.

There is a significant amount of positive correlation between the responses for individuals within the same plan. Failure to account for this intra-plan correlation would result in poor estimates of variance. Specifically, if not accounted for, a positive intra-plan correlation would cause the variances for the parameters discussed in this section to be underestimated.¹¹ Underestimating the variances would lead to liberal hypothesis tests (false positive results) and would result in an over-parameterized model, because we used a specific significance level as a cutoff to determine which higher-order parameters to include in the model specification.

To account for the intra-plan correlation, variances were estimated using the GEE variance estimation procedure available in SUDAAN (RTI, 2001). For robustness, we also considered whether intra-market correlation of plan- *and* market-level variables might reduce the estimated variances. The bias to the standard errors from intra-market correlation was about the same magnitude as that caused by intra-plan correlation. (The intra-market correction picked up the intra-plan effects to the extent that beneficiaries in the same plans face both the same plan- and market-level variables.) We report the results from the model correcting for intra-plan correlation, which is most consistent with the **disenrollment weights (Section 2.3)** used in the sample design.

Before conducting the GLM analysis, all explanatory variables were transformed and standardized. The transformations attempted to make the variables more symmetrical, and included changing the coding or grouping of some categorical variables from the categorical coding used in the individual logit models. Symmetry is important in this model because, with categorical variables and their many interactions, lack of symmetry can result in “empty” categories, which can reduce the power of the model in statistical inference. The standardization made all of the explanatory variables have a mean of 0.0 and a variance of 1.0. There were several reasons for undertaking these steps. The first was to make the resulting parameters comparable across all explanatory variables. The second was to prevent explanatory variables with large variances from dominating the model. The third was to ease the interpretation of main

¹⁰The ‘model specification’ is the group of main effects, interaction effects, and quadratic terms included in the empirical model for the group of explanatory variables in the model. A fully parameterized model would include all possible pairs of interactions, all three-way interactions, and each variable in both linear and quadratic form. The initial model specification included higher-order terms for all possible paired and three-way interactions, and squared terms, for all 15 main effect variables (**Table 5**). The specification was pared down to the final specification which included only those nonlinear effects that had a p-value less than 0.01, and all main effects with a p-value less than 0.01, unless they were significant in higher order terms. Two main effects in **Table 5** were dropped—gender and dual eligibility—as these were not statistically significant in the model as either main effects or in higher order terms.

¹¹The sample design effects for the parameters had a median of 2.54. This implies that ignoring the intra-plan correlation would produce estimated variances for the parameters that are 2.54 times too small.

effects in the presence of the numerous interactions and quadratic terms that were included in the model.

Table 9
Empirical results (odds ratios) from GLM estimation of the MIR for disenrollment:
n = 22,470; Overall Significance > 99.9 percent

'Reason' Comparison→ Variable Name ↓	Plan Information vs. Premium & Copays	Doctor Access vs. Premium & Copays	Care vs. Premium & Copays	Drug Coverage vs. Premium & Copays
Age				
64 or younger	1.12	0.56**	0.64**	1.51*
65 to 74				
75+	1.49**	1.07	1.28**	0.72**
Race & Ethnicity				
Non-Hispanic Caucasian				
Hispanic	0.88	0.53**	1.52**	1.21
Non-Hispanic African American	0.93	0.46**	0.87	0.84
Non-Hispanic other	0.95	0.59**	0.78*	0.83
Education				
Less than high school grad.	0.73	0.54**	0.64**	0.71
High school grad. or more				
Health Status				
Excellent – very good				
Good – poor	1.22	1.32**	1.31*	1.62**
Disenroll to FFS or MMC				
FFS				
MMC	0.72*	0.94	0.76**	1.88**
Satisfaction with Plan^a				
0	6.39	1.88	9.27	3.32
1	5.95	1.84	8.43	3.21
2	5.18	1.75	7.02	3.00
3	4.26	1.64	5.41	2.73
4	3.34	1.51	3.93	2.41
5	2.54	1.37	2.76	2.09
6	1.91	1.25	1.93	1.79
7	1.47	1.14	1.39	1.52
8	1.18	1.06	1.08	1.30
9	1.02	1.01	0.95	1.12
10				
Drug Coverage				
No coverage				
Some coverage	0.79*	1.14*	1.12	1.05

(continued)

Table 9
Empirical results (odds ratios) from GLM estimation of the MIR for disenrollment:
n = 22,470; Overall Significance > 99.9 percent (continued)

'Reason' Comparison→ Variable Name ↓	Plan Information vs. Premium & Copays	Doctor Access vs. Premium & Copays	Care vs. Premium & Copays	Drug Coverage vs. Premium & Copays
Years plan has been in operation	1.19	1.86**	1.23**	1.48**
Market share of plan	0.64**	0.59**	0.74**	0.41**
Private managed care penetration	0.64**	0.61**	0.69**	0.80**
Proportion of the county that is urban	1.27**	1.40**	1.09	1.04
Proportion of elderly households with low annual income	1.31**	1.32**	1.14*	1.23**
Proportion of population perceiving a shortage of primary care physicians	0.83	1.12	0.88	0.53**
Nonlinear Terms				
(Plan's Medicare market share) * (plan tenure)	1.28**	1.36**	1.13*	1.12*
(Private managed care penetration) * (plan's Medicare market share)	1.55**	1.20**	1.19**	1.26**
(Physician shortage) * (plan's Medicare market share)	1.22**	1.19**	1.26**	1.05
(Elderly poverty) * (private managed care penetration)	0.75**	0.83**	0.83**	0.90*
(Plan's Medicare market share) * (drug coverage)				
No Coverage ^b	0.64	0.59	0.74	0.41
Some Coverage	0.95**	1.07**	1.34**	0.85**
(Plan tenure) * (drug coverage)				
No Coverage ^b	1.19	1.86	1.23	1.48
Some Coverage	0.91	0.89**	0.77**	1.05**
(Private managed care penetration) * (drug coverage)				
No Coverage ^b	0.64	0.61	0.69	0.80
Some Coverage	1.22**	1.35**	1.05**	1.28**
(Physician shortage) * (drug coverage)				
No Coverage ^b	0.83	1.12	0.88	0.53
Some Coverage	1.23*	1.39*	1.17**	1.48**

(continued)

Table 9
Empirical results (odds ratios) from GLM estimation of the MIR for disenrollment:
n = 22,470; Overall Significance > 99.9 percent (continued)

'Reason' Comparison→ Variable Name ↓	Plan Information vs. Premium & Copays	Doctor Access vs. Premium & Copays	Care vs. Premium & Copays	Drug Coverage vs. Premium & Copays
(Physician shortage) * (whether disenrolled to another managed care plan or FFS)				
FFS ^b	0.83	1.12	0.88	0.53
MMC	0.64	0.69**	0.78	0.35**

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

^aThis variable is treated as continuous in the model specification, which also includes a quadratic term. Using the variable in its categorical form would have resulted in too many partitions of data in the GLM model. The satisfaction with plan variable is significant in the GLM model at better than 99 percent in all Reason categories. We combined the linear and quadratic terms and created this table of effects by unit score of the variable (0–10), for comparability with the results reported for the individual logit models. In both **Tables 8 and 9**, the quadratic effect of satisfaction on Reason is obvious, as there is an increasingly high odds ratio as satisfaction falls.

^bThese reference categories are calibrated at the main effects of the continuous variables in these interaction terms. The interaction effects are interpreted as a change from this main effect baseline caused by the binary interaction variable attaining its “1” (nonreference) category. For example, looking at the last two rows and cells in the table above, the main effect for physician shortage in Drug Coverage versus Premium & Copays reason (0.53) is reduced (0.35) when the beneficiary disenrolls to another MMC plan. A beneficiary living in an area of physician shortage is less likely to cite Drug Coverage versus Premium & Copays, and even less likely if they also disenroll to another MMC plan.

In the GLM, the main effects of variables are their effects independent of the interaction effects that these variables may have with others. For variables with significant interactions with others, the main effects do not capture the full effect of the variable. To calculate the full effect of (a change in) a variable, both its main effect and all interaction effects must be considered jointly. This somewhat complicates the interpretation of the results, but the added complexity allows one to assess nonlinear and interaction effects that, if omitted, may cause bias on main effect parameters.

When the explanatory variables were standardized, the parameters (odds ratios) for the main effects could be interpreted as the expected change in the odds ratio between the two comparison MIR groups (Reason A versus Cost Reason) when all other variables were set to their means. Since all variables were standardized, this implies that all variables were set to 0.00. The exception was for categorical variables, which were set to their reference group or level. This standardization greatly facilitates the interpretation of full effects for variables that have nonlinear interactions in the model.

Summary of findings from GLM analysis. In general, we found consistency between the binary logistic analysis of the All Reasons and the GLM analysis of the MIR. In what follows, we discuss the GLM results, then compare these with the individual logit results on a subgroup-by-subgroup basis. **Table 9** lists the empirical results of the GLM estimation.

To improve symmetry in the GLM, the age variable was recoded as a categorical variable with three levels corresponding to the age groupings of < 65, 65–74 and 75+, with 65–74 as the reference group. The oldest Medicare beneficiaries were more likely than the younger elderly to cite Plan Information or Care than Premium & Copays (the reference reason), but less likely to cite Drug Coverage than Premium & Copays. The non-elderly disabled were less likely to cite Doctor Access or Care than Premium & Copays, and more likely to cite Drug Coverage than Premium & Copays. These findings are interesting, because we could not assess the relative importance of Drug Coverage and Premium & Copays for the non-elderly disabled group in the individual logistic analysis of All Reasons, where we found that the non-elderly disabled were more likely (than younger elderly beneficiaries) to cite both Drug Coverage and Premium/Costs.

The race/ethnicity variable had non-Hispanic Caucasians as the reference group. Results suggest that non-Hispanic Caucasians were more likely than all other races/ethnicities to state Doctor Access as their MIR, versus Premium & Copays. This extends the finding from the individual logistic analysis of All Reasons, where we found that non-Hispanic Caucasians were more likely than African Americans to cite Doctor Access and less likely to cite Premium & Copays.

Results suggest that beneficiaries with less than high school education were less likely to cite Doctor Access or Care than Premium & Copays as their MIR for disenrolling. Because individuals with less education generally have lower income, this finding is consistent with what one might expect.

To induce symmetry, overall health was recoded from a five-category variable to a two-category dummy variable. The recoding is 0 = (1,2: excellent/very good) and 1 = (3,4,5: good/fair/poor). In all cases, individuals with worse self-assessed health status were significantly more likely (than those in better health) to indicate that Care, Doctor Access, and Drug Coverage reasons were more important than Premium & Copays. This is interesting, because we could not assess the relative importance of Care and Drug Coverage to Premium & Copays for the sicker group in the individual logistic analysis of All Reasons, where we found consistent results for the Care and Drug Coverage reasons but found no significant relationship between health status and Copayments/Coverage or Premium/Costs reasons.

Beneficiaries who disenrolled to another MMC plan instead of the original FFS plan were less likely to cite Plan Information and Care, and more likely to cite Drug Coverage reasons, than Premium & Copays. This is consistent with the All Reasons logit results.

The findings for the individual's reported satisfaction with their health plan suggest that people who rated their plan lower were more likely to cite all other reasons than Premium & Copays as their MIR, with larger impacts from the Plan Information and Care groups relative to Premium & Copays. These findings are consistent with the All Reasons logit results, where we saw the clearest satisfaction gradient for the Plan Information, Care Access, Specific Needs, and Other Care or Service groups, but were not able to determine the relative importance of Premium & Copays.

The variable indicating drug coverage is a dichotomous variable that is 0 if no drug coverage was offered and 1 otherwise. The main effect test for this variable has a p-value of 0.0140, which would indicate that it was not a significant effect (given the α -level of 0.01).

However, all main effects are included in the model when they are involved in significant interactions. The highly significant interactions of drug coverage with four continuous plan- and market-level variables indicates that the effect that these continuous variables had on MIR selection was quite dependent on whether a plan offered some drug coverage or no drug coverage. At the 95 percent level of significance, beneficiaries with some drug coverage were less likely to cite Plan Information than Premium & Copays, and more likely to cite Doctor Access than Premium & Copays. The four significant interactions with the drug coverage variable are discussed next.

The findings for the variable measuring the number of years a plan had been in operation suggest that individuals in plans with longer tenure with Medicare were less likely to cite Premium & Copays as their MIR, and were more likely to cite problems with Doctor Access or Drug Coverage, but only if drug coverage was not available. When the continuous variable measuring plan tenure is interacted with the drug coverage variable, we find that when drug coverage was available, an individual was more likely to state Premium & Copays as their MIR than the other four reasons. Also, years of plan tenure had a significant quadratic effect—longer years in operation made it even more likely that Doctor Access would be cited versus Premium & Copays.

When the continuous variable measuring the plan's share of the Medicare market in its service area is interacted with drug coverage, results suggest that if no drug coverage was offered, and as the plan's market share increased, an individual was more likely to cite Premium & Copays as their MIR than one of the other four reasons. However, when some drug coverage was provided, this effect was greatly nullified—plan share had little to no effect on these other three reasons. For the Care versus Premium & Copays comparison, when drug coverage was available, the individual was more likely to state Care as their MIR than Premium & Copays as a plan's market share increased. This effect is in direct contrast to the comparison when no drug coverage was offered.

The continuous variable measuring the proportion of the private insurance market in the state that is held by PPO or HMO plans is a measure of overall market penetration by managed care. The results suggest that beneficiaries living in markets with greater managed care penetration were typically more likely to cite Premium & Copays than other reasons as their MIR for disenrolling. The interaction of private managed care penetration with plan market share suggests that as either or both plan market share and managed care penetration increased, the other four reasons become more important relative to Premium & Copays. This suggests that, for beneficiaries living in states with higher managed care penetration and in local markets dominated by a large Medicare HMO plan, other problems besides Premium & Copays were of more concern. Using a spatial query, one could easily identify where these sorts of markets were (or if, indeed, they actually existed) in a geographic setting.

On average, greater private managed care penetration tended to increase the probability that a beneficiary would state Premium & Copays as their MIR. However, given certain combinations of the interacting variables, this trend is reversed. Specifically, when age was greater than 65 and some drug coverage was provided, beneficiaries were more likely to state Doctor Access or Drug Coverage than Premium & Copays as their MIR as managed care penetration increased. In general, beneficiaries with some drug coverage were more likely to cite

Plan Information, Doctor Access, Care, or Drug Coverage than Premium & Copays as their MIR than beneficiaries with no drug coverage. In addition, beneficiaries who disenrolled to join another HMO were less likely to cite Premium & Copays and more likely to cite Doctor Access or Drug Coverage as their MIR.

The continuous variable measuring physician shortage is defined by the proportion of individuals in a state that perceive a shortage of primary care providers, in 2001. Beneficiaries in states with physician shortages were significantly less likely to cite Drug Coverage than Premium & Copays as their MIR. The physician shortage variable is also significant as a squared term, and suggests that beneficiaries in regions with greater shortages were even less likely to cite Drug Coverage as more important than Premium & Copays.

The physician shortage variable is significant when interacted with two other variables simultaneously: whether the beneficiary disenrolled to an MMC or FFS plan, and whether the beneficiary had drug coverage. Results suggest that the Premium & Copays reason was more important when there was a shortage of physicians and beneficiaries had returned to another Medicare HMO. Conversely, in these shortage situations, Doctor Access was more important than Premium & Copays when the beneficiary had returned to FFS. These findings are consistent with the main effects for the disenrollment to MMC or FFS variable, suggesting that physician shortages strengthened these main effect findings.

The interaction between physician shortage and drug coverage suggests that, in areas with greater physician shortages, Premium & Copays was less likely to be cited than all other reasons, when the beneficiary had some drug coverage. For beneficiaries in these shortage areas and without drug coverage, the Doctor Access reason was more likely to be cited than Premium & Copays.

CHAPTER 5

PLAN-LEVEL RESULTS

The purpose of the analysis reported in this chapter was to investigate the assertion that reports of plan disenrollment rates can suggest beneficiaries' relative satisfaction with various attributes of their plans, including quality, and determine:

1. Are higher voluntary plan disenrollment rates associated with citing specific types of reasons for disenrollment? With citing more reasons for disenrollment?
2. Do high disenrollment rates suggest problems with access or quality of care for certain beneficiaries?
3. What plan and market characteristics are associated with beneficiaries leaving plans?

5.1 Descriptive Analysis

The outcome variable for this analysis was the 2001 voluntary disenrollment rate as calculated by CMS using MMC enrollment data. The units of analysis were managed care organizations (MCOs) participating in Medicare during 2001. We first used descriptive statistics to examine the dependent and potential independent variables, and then conducted bivariate analyses using correlation and analysis of variance (as appropriate for continuous and categorical independent variables). We provide the results of this descriptive analysis in this section. In **Section 5.2**, we report on the results of a series of regression models to investigate relationships between MCO disenrollment rates (more precisely, the natural log of these rates) and potential covariates.

Disenrollees from 196 MCOs were surveyed in the 2001 Disenrollment Reasons Survey. CMS calculated disenrollment rates for 170 of these MCOs. (Disenrollment rates were not calculated for plans who withdrew from the MMC Program effective 1/1/2002.) There were less than 10 respondents to the Reasons Survey for seven of the 170 MCOs, so these seven MCOs were excluded, leaving 163 MCOs for this analysis.

The average Medicare MMC enrollment at the end of 2001 for these MCOs was 32,982 (with a standard deviation of 52,912). The MMC enrollment ranged from 570 to 453,081 beneficiaries but the majority of plans (10th–90th percentile) had 3,000–71,000 enrollees. The mean voluntary disenrollment rate during 2001 for these 163 MCOs was 12 percent (with a standard deviation of 10), a median of 9 percent, and a range from 1 to 56 percent. (The mean disenrollment rate for the seven excluded plans was 5 percent and the range was from 1 to 13 percent.)

Figure 9 displays the distribution of voluntary disenrollment rates for the 163 MCOs in this analysis.

Table 10 presents descriptive statistics for the disenrollee characteristics. For example, the average percent of disenrollees in an MCO who reported that they were in poor or fair health was 30 percent but in a least one MCO this percent was as low as 10 percent and in another it was as high as 57 percent.

Figure 9
2001 Voluntary disenrollment rates

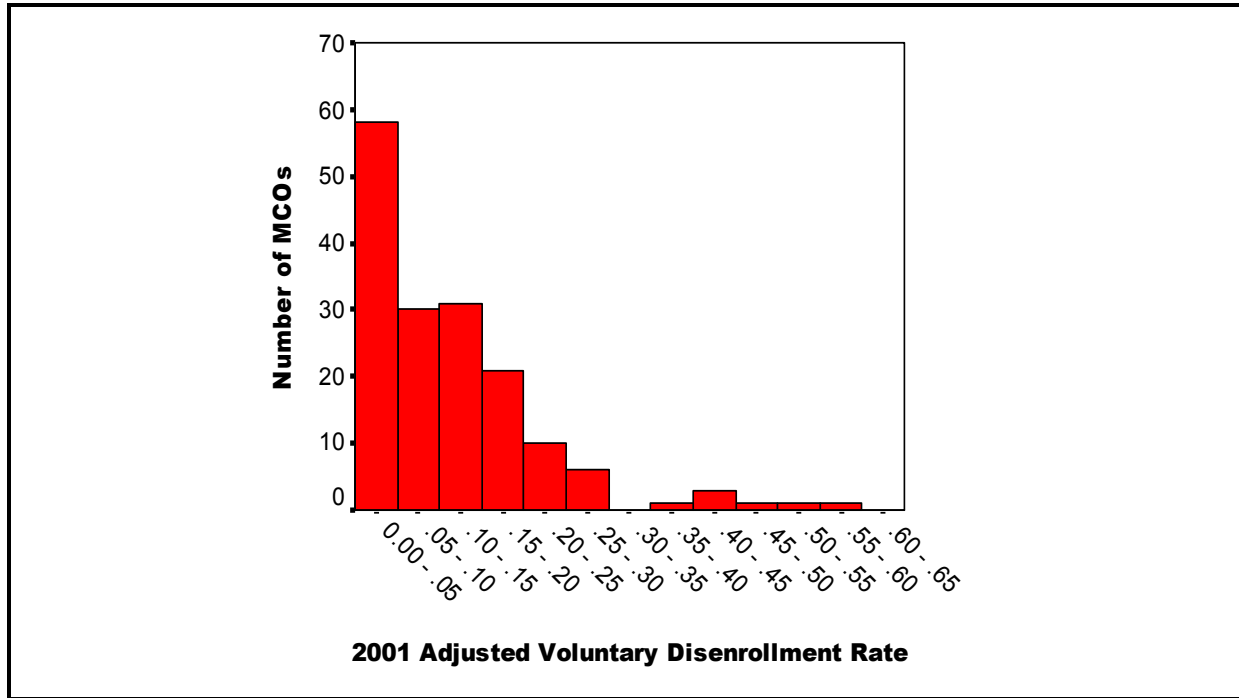


Table 10
Disenrollee characteristics by MCO

Disenrollee characteristics (n = 163)	Min.	Max.	Mean	Std. Dev.
Percent female	34.8	75.1	57.7	6.1
Percent under 65 (non-elderly disabled)	0.0	45.1	11.8	6.9
Percent reporting poor or fair health	9.9	57.0	30.2	8.0
Percent who did not graduate high school	6.2	59.5	28.2	9.9
Percent not non-Hispanic Caucasian	0.0	97.6	15.9	17.8
Percent Hispanic	0.0	62.7	7.0	10.2
Percent dually eligible (Medicaid)	0.0	80.9	16.9	12.2
Percent leaving to another MMC plan	0.0	91.1	38.0	25.5
Percent leaving during 1st and 4th quarters	38.2	98.5	61.6	9.2
Percent leaving after less than 3 months	0.0	33.0	9.3	8.0
Average rating of health care	2.82	7.76	6.22	0.90
Average rating of health plan	2.07	8.09	5.76	0.94

Table 11 presents descriptive statistics by MCO for the reasons cited for leaving a plan. On average, the most frequently cited reason group was Premium/Costs with 54 percent of disenrollees from an MCO citing a reason for leaving that fell in this group. However, the actual percentage of disenrollees from an MCO citing reasons in this grouping ranged from 16 to 94 percent. The next most frequently cited reason grouping, Copayments/Coverage, was cited nearly as frequently (53 percent) on average, but the range for MCOs was not quite as great (from 23 to 83 percent). The least frequently cited reason grouping, Specific Needs, had both the lowest average by MCO (24 percent) as well as the smallest range, although at 5 to 55 percent this range was still quite large.

Table 11
Disenrollment reasons cited by MCO

Percent of disenrollees citing any Reason in group	Min.	Max.	Mean	Std. Dev.
Premium/Costs	16%	93%	54%	20
Copayments/Coverage	23%	83%	53%	13
Doctor Access	1%	74%	36%	17
Plan Information	4%	90%	35%	14
Care Access	3%	61%	28%	13
Drug Coverage	0%	56%	27%	12
Other Care or Service	0%	93%	26%	10
Specific Needs	5%	55%	24%	10

Table 12 presents the results of a bivariate analysis to determine whether higher MCO disenrollment rates were associated with particular types of reasons for leaving. We calculated Pearson's correlation coefficients for the 163 MCOs and determined that the Drug Coverage and Doctor Access reasons groupings were moderately associated with disenrollment rates (between 0.2 and 0.4). However, the distribution of disenrollment rates is highly skewed. To account for the lack of a normal distribution, we calculated the natural logarithm of each disenrollment rate. Correlation coefficients were higher with the natural log of the disenrollment rate, and so, in addition to the two reason groupings noted above, we also noted moderate associations between higher disenrollment rates and higher percents of disenrollees citing Plan Information and Specific Needs problems and Copayments/Coverage issues. In addition, higher disenrollment rates were also associated with the citing of reasons. On average, disenrollees from MCOs cited more reasons for leaving than disenrollees from MCOs with lower disenrollment.

Table 12
Are higher rates associated with different types of reasons for leaving?

Percent of disenrollees citing any reason in grouping	Correlation with adjusted disenrollment rate			
	Normal		Natural log	
Drug Coverage	0.343	p < .01	0.481	p < .01
Doctor Access	0.250	p < .01	0.339	p < .01
Plan Information	0.192	p < .05	0.257	p < .01
Specific Needs	0.192	p < .05	0.247	p < .01
Copayments/Coverage	0.153	n.s.	0.206	p < .01
Other Care or Service	0.002	n.s.	0.009	n.s.
Care Access	-0.002	n.s.	0.053	n.s.
Premium/Costs	-0.036	n.s.	-0.007	n.s.
Average number of reasons cited	0.274	p < .01	0.398	p < .01

As has been noted elsewhere (Harris-Kojetin et al., 2002), there are associations between citing reasons in one group with citing reasons in a different grouping. Because of this characteristic at the individual level, we were concerned that if the same association was found at the MCO level, we might risk introducing unacceptable levels of colinearity into any multivariate models if all eight reasons groupings were included. We calculated correlation coefficients between the MCO-level reasons variables, and the results are presented in **Table 13**.

Table 13
Correlation between MCO-level reason groups

	Plan Information	Doctor Access	Care Access	Specific Needs	Other Care or Service	Premium Costs	Copayments/Coverage	Drug Coverage
Plan Information	1.000							
Doctor Access	0.520	1.000						
Care Access	0.796	0.583	1.000					
Specific Needs	0.717	0.323	0.466	1.000				
Other Care or Service	0.715	0.467	0.800	0.504	1.000			
Premium/Costs	-0.520	-0.670	-0.550	-0.407	-0.523	1.000		
Copayments/Coverage	0.152	-0.152	0.001	0.461	0.177	0.231	1.000	
Drug Coverage	0.466	0.287	0.232	0.512	0.278	-0.110	0.542	1.000

From this analysis, we observed that leaving due to Plan Information problems was highly correlated ($r > 0.7$) with leaving due to Care Access, Specific Needs, and Other Care or Service problems. Consequently, this reason was dropped from the multivariate models to reduce multicollinearity. The Premium/Costs group was negatively associated with all other reason groups and had previously suggested no bivariate relationship with disenrollment rate, but this variable was retained in case it showed a significant association when we controlled for other reasons for leaving.

The next step in the analysis was to see if there were any bivariate associations between disenrollment rates and benefits or premiums. We conducted analysis of variance comparing the disenrollment rates across each dichotomous benefit or premium variable. The results are presented in **Table 14**. For example, 39.9 percent of MCOs offered zero premiums. The average disenrollment rate for these MCOs was 14.2 percent, compared to 10.5 percent for the plans that had non-zero plans. In other words, disenrollees left plans with zero premiums at a higher rate than they left plans who charged some level of premium. In fact, this pattern of disenrollees leaving plans with the more desirable characteristic more frequently than they left the less desirable plans extended to dental coverage and drug coverage. However, the reverse pattern was observed for inpatient copayments: beneficiaries left plans with higher inpatient copayments more frequently than they left plans with lower inpatient copayments.

Table 14
Are disenrollment rates associated with premiums or benefits?

Benefits or premiums (n = 158)	Percent of MCOs	Average disenrollment rate	ANOVA results
Zero premiums	39.9%	14.2%	F = 5.0*
Non-zero premiums	60.1%	10.5%	
Premiums \leq \$50/month	78.5%	12.3%	F=5.0*
Premiums $>$ \$50/month	21.5%	10.6%	
Inpatient copays $<$ \$200 per stay	72.2%	10.8%	F=5.0*
Inpatient copayments \geq \$200 per stay	27.8%	14.9%	
Office visit copayments \leq \$20	79.7%	11.3%	F = 4.4*
Office visit copayments $>$ \$20	20.3%	14.6%	
Some coverage for dental services	24.1%	15.0%	F = 12.9**
No coverage for dental services	75.9%	11.0%	
Some coverage for drugs	65.2%	14.0%	F = 12.9**
No coverage for drugs	34.8%	8.1%	
Some coverage for brand-name drugs	43.0%	12.2%	F = 12.9**
No coverage for brand-name drugs	57.0%	11.8%	
Unlimited coverage for generic drugs	27.2%	13.3%	F = 12.9**
Limited coverage or no coverage for generic drugs	72.8%	11.5%	

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

With the exception of the finding that disenrollment rates were higher from plans with higher inpatient hospital copayments, other findings seemed non-intuitive: plans with zero premiums and plans that offered some dental or coverage had higher disenrollment rates than plans with a premium and plans that did not offer any dental or drug coverage. There are a number of possible explanations for this finding:

- The findings may be a function of data—prior to mid-2002, as previously noted, no enrollment data was available at the benefit package level: if more than one plan was offered by an MCO, the disenrollee was assumed to have left the plan with the least costly/most generous plan. This assumption has been historically used by CMS in analyzing benefit coverage for those *enrolled* in a given MCO, but may not apply in this analysis of *disenrollees*.
- The benefits examined represent only a small subset of all the possible variation in coverage offered by MMC plans.
- Benefit information was not available for all MCOs.
- The impact of employer sponsored coverage is not considered. CMS has collected data for many MCOs on how many enrollees had MMC coverage through a group versus as an individual, but these data did not cover every MCO in the analysis and, so, could not be used.
- Benefits for the 2002 year were not considered in this analysis: disenrollees may have left the plans with seemingly more generous coverage at the end of 2001 when MCOs announced higher premiums and/or reduced benefits for the following year or when they had exhausted benefits for drugs or dental services under their former plan.

In addition to looking at reasons for leaving and premiums and benefits, we also investigated other plan or market characteristics that might be associated with disenrollment rates. **Tables 15 and 16** present the results of these bivariate analyses.

5.2 Multivariate Statistical Methods

As with the descriptive analysis, the outcome variable for this MCO-level analysis was the 2001 voluntary disenrollment rate as calculated by CMS using MMC enrollment data. The units of analysis were managed care organizations (MCOs) participating in Medicare during 2001. After completing our descriptive and bivariate analyses to assist with variable selection, we ran a series of regression models to investigate relationships between MCO disenrollment rates (more precisely, the natural log of these rates). We entered potential covariates into our models in groups. In other words, in the first model, we regressed disenrollment rates on the disenrollee characteristics of each MCO. In the next model, we regressed disenrollment rates on reasons for leaving. A third model included significant disenrollee characteristics and reasons for leaving. We followed a similar process introducing other types of variables that were measured at the plan- or market-level. Due to the small number of MCOs available for analysis, we used this approach to minimize the number of covariates in each model.

Table 15
What plan characteristics are associated with disenrollment rates?

	n	Mean (sd)	Results of bivariate analysis with natural log of disenrollment rate	
Characteristics of Plan				
Years in operation with CMS	163	8.33 (5.37)		
Years in business (HEDIS)	143	16.81 (11.10)	Correlation with natural log of disenrollment rate	−.242**
Primary Care Provider Turnover (HEDIS)	141	12.9% (13.0)	Correlation with natural log of disenrollment rate	.366**
1999 percent rating plan 7 or less on 0–10 scale (CAHPS)	142	17.3% (5.5)	Correlation with natural log of disenrollment rate	.349**
No. of MMC enrollees in MCO	163	32,892 (52,912)		
Profit Status	163	For profit 62% Not for profit 38%	ANOVA: Average disenrollment rate 14.3%; 7.4%	F = 18.6**

**Significant at the 99% level of confidence.

Table 16
What market (service areas) characteristics are associated with disenrollment rates?

	n	Mean (sd)	Results of bivariate analysis with natural log of disenrollment rate	
MMC Penetration (2000)	163	27.6% (3.8)		
Change in MMC Penetration (1998–2000)	163	2.9% (3.5%)		
Average MMC Payment (2001)	163	\$568 (\$76)	Correlation with natural log of disenrollment rate	.509**
Percentage of population ≥ 65	163	12.8% (2.6)		
Percentage 65–74 as percent of population ≥ 65	163	52.1% (2.3)		
Percentage of households with householder ≥ 65, that have < \$30,000 annual income (1999 dollars)	163	46.5% (5.9)		
Physicians per 1,000 elderly	163	19.9 (6.4)		
Percentage of population underserved by primary care physicians in 2001	163	9.4% (4.4)	Correlation with natural log of disenrollment rate	.192*
Percentage of physicians who accept Medicare assignment	163	88.5% (5.8)		

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

5.3 Empirical Estimates from the Multivariate Analysis

As already described, we ran a series of regression models to investigate relationships between MCO disenrollment rates (more precisely, the natural log of these rates) and blocks of potential covariates. The first regression model included the set of disenrollee variables as covariates. **Table 17** presents the results of this analysis, examining whether disenrollment rates were associated with particular disenrollee characteristics. The model was significant with an adjusted R-square of 4.44. Higher disenrollment rates were associated with plans that had:

- More disenrollees who did not graduate high school;
- More Hispanic disenrollees;
- More disenrollees switching to MCOs (vs. FFS);
- Fewer disenrollees in fair or poor health;
- Fewer dually eligible;
- Fewer rapid disenrollees; and
- Lower disenrollee ratings of their former health plan.

Table 17
Are disenrollment rates associated with particular disenrollee characteristics?

Dependent variable: Natural log disenrollment rate	Unstandardized coefficients	
	Beta	(SE)
n = 163		
(Constant)	-1.50	(0.79)
Percentage female(*)	1.57	(0.90)
Percentage under 65 (non-elderly disabled)	1.01	(1.06)
Percentage reporting poor or fair health**	-2.92	(0.98)
Percentage who did not graduate high school**	2.36	(0.66)
Percentage not non-Hispanic Caucasian	.38	(0.41)
Percentage Hispanic**	1.89	(0.59)
Percentage dually eligible (Medicaid)**	-1.74	(0.65)
Percentage leaving to another MMC plan**	1.05	(0.23)
Percentage rapid (leaving < 3 months)**	-2.75	(0.80)
Average rating of former health plan	-0.31	(0.07)**
F = 13.8** Adj. R2 = .44		

**Significant at the 99% level of confidence.

(*)Significant at the 90% level of confidence.

In the next model, we examined whether disenrollment rates were associated with disenrollees' reasons for leaving. **Table 18** presents these results and shows that this model explained about 35 percent of the variation in disenrollment rates. Higher disenrollment rates were associated with a greater percentage of disenrollees leaving due to problems getting the doctors they wanted, with more disenrollees leaving because plan premiums or premiums were too high, and with problems getting or paying for prescription medicines.

Table 18
Are disenrollment rates associated with reasons for leaving?

Dependent variable: Natural log of disenrollment rate	Unstandardized coefficients	
	Beta	(SE)
n = 163		
(Constant)**	-4.45	(0.42)
Doctor Access problems**	2.63	(0.48)
Care Access problems	-0.76	(0.77)
Specific Needs problems(*)	1.44	(0.82)
Other Care or Service problems	-1.38	(0.99)
Premium/Costs issues**	1.33	(0.43)
Copayments/Coverage	-0.23	(0.64)
Drug Coverage issues**	2.52	(0.59)
F = 13.6** Adj. R ² = .35		

**Significant at the 99% level of confidence.

(*)Significant at the 90% level of confidence.

We then combined took the covariates with a significance level of at least 0.10 and combined the two models together to examine disenrollment rates controlling for both disenrollee characteristics and reasons for leaving. The results of this model are presented in **Table 19**. The direction of the relationships between each covariate and the disenrollment rate remained the same and most covariates remained significant (with the exception of the percent of female beneficiaries and the percent that were dually eligible).

Next we looked at possible associations between disenrollment rates. As **Table 20** shows, benefits and premiums (as formulated for this study) only explained about 19 percent of the variation in disenrollment rates and only the presence of absence of dental coverage and coverage of any drugs or brand name drugs were significantly related to disenrollment rates. However, it is important to note (as discussed earlier) that premiums and benefits data were not available for all MCOs in this analysis hence the sample size was lower for this analysis than for the preceding analysis.

Table 19
Are disenrollment rates associated with disenrollee characteristics and reasons for leaving?

	Unstandardized coefficients		Standardized coefficients
	B	Std. Error	Beta
(Constant)**	-3.487	0.851	
Female	1.067	0.863	0.077
Reporting poor or fair health**	-2.940	0.788	-0.277
Did not graduate high school**	2.022	0.575	0.237
Hispanic**	1.587	0.557	0.192
Dually eligible (Medicaid)	-0.840	0.512	-0.122
Left to go to another MMC plan**	0.777	0.225	0.235
Left after less than 3 months(*)	-1.554	0.805	-0.148
Average rating of health plan*	-0.182	0.079	-0.204
Doctor Access problems**	1.879	0.399	0.377
Specific Needs problems(*)	0.627	0.739	0.072
Concerns about premiums**	1.153	0.363	0.274
Problems getting/paying for prescription medicines(*)	0.852	0.515	0.125
F = 15.7** Adj. R ² = .52			

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

(*)Significant at the 90% level of confidence.

Table 20
Are disenrollment rates associated with premiums and benefits?

N = 157	Unstandardized coefficients		Standardized coefficients
	B	Std. Error	Beta
(Constant)**	-1.950	0.180	
Zero monthly premium	0.012	0.146	0.007
Monthly premium > \$50	-0.174	0.164	-0.086
Inpatient copay < \$20	-0.176	0.153	-0.095
Office visit copay > \$20	0.236	0.160	0.114
Some dental coverage*	0.394	0.153	0.203
No drug coverage**	-0.801	0.172	-0.460
Some brand coverage*	-0.325	0.162	-0.194
Unlimited generic coverage	-0.083	0.155	-0.045
F = 5.6** Adj. R ² = .19			

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

Next, we next added the three benefits variables with significant coefficients to the disenrollment rate model. The results of this new model are displayed in **Table 21**. None of the three additional variables were significant in this model. Furthermore, their presence reduced the sample size by six plans so we elected to proceed with further analyses without including any benefits variables. This does not mean that there is no association between disenrollment rates and benefits but more likely suggests that the limitations of the current methods for estimating benefits are not precise enough to detect significant relationships.

Table 21
Are disenrollment rates associated with disenrollee characteristics, reasons for leaving, and premiums and benefits?

N = 157	Unstandardized coefficients		Standardized coefficients
	B	Std. Error	Beta
(Constant)**	-2.608	0.761	
Percentage reporting poor or fair health**	-3.560	0.784	-0.341
Percentage who did not graduate high school**	1.844	0.597	0.218
Percentage Hispanic*	1.224	0.553	0.151
Percentage leaving to another MMC plan**	0.680	0.238	0.207
Percentage leaving after less than 3 months(*)	-1.515	0.815	-0.147
Average rating of health plan*	-0.166	0.081	-0.187
Percentage citing Doctor Access problems**	1.794	0.414	0.363
Percentage citing Specific Needs problems	0.613	0.762	0.071
Percentage citing Premium/Costs issues**	1.066	0.381	0.257
Percentage citing Drug Coverage issues	0.828	0.543	0.120
Some dental coverage	0.176	0.124	0.091
No drug coverage	-0.229	0.149	-0.132
Some brand coverage	-0.151	0.129	-0.090
F = 13.0 (p < .001) Adj R ² = .50			

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

(*)Significant at the 90% level of confidence.

The final set of variables to introduce into the analysis was the plan and market information (mostly measured at the county level, but with a few variables available only at the state level). We excluded the plan-level variables derived from the CMS HEDIS dataset due to missing data. **Table 22** presents the regression results for disenrollment rates and plan and market characteristics. These variables collectively explained about 37 percent of the variation in disenrollment rates. Higher disenrollment rates were associated with higher MMC payments, for profit tax status, and a greater percent of the population in the state being underserved by primary care physicians. Lower disenrollment rates were associated with having fewer physicians per 1,000 elderly people in the county and with having more elderly households with lower incomes.

Table 22
Are disenrollment rates associated with plan and market characteristics?

N = 163	Unstandardized coefficients		Standardized coefficients
	B	Std. Error	Beta
(Constant)**	-4.384	1.026	
MMC market penetration 2000 in MCO service area	-0.267	0.509	-0.039
Average MMC payments in MCO service area**	0.006	0.001	0.557
Number of enrollees in MCO	0.000	0.000	-0.063
For profit status**	0.523	0.118	0.302
Years in operation*	0.026	0.012	0.165
Change in MMC penetration (12/98-12/00)	1.300	1.875	0.053
Households with householder ≥65, that have < \$30,000 annual income (1999 dollars)(*)	-1.952	1.126	-0.138
MDs per 1,000 elderly*	-0.021	0.010	-0.162
Physicians who accept Medicare assignment	-0.011	0.010	-0.078
Population underserved by primary care physicians**	0.041	0.013	0.214
F = 10.4 ** Adj. R ² = .37			

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

(*)Significant at the 90% level of confidence.

For the final model, we combined the variables from **Table 22** with significant coefficients with those from **Table 19** to look at the association between disenrollment rates and disenrollee characteristics, reasons for leaving, and plan and market characteristics. The results of the full model are presented in **Table 23**.

Table 24 shows the results for the best reduced model.

The final model shows that higher disenrollment rates were associated with:

- A lower percentage of disenrollees reporting poor or fair health;
- A lower percentage of disenrollees leaving within 3 months of enrollment;
- A higher percentage of disenrollees who did not graduate high school;
- A higher percentage of Hispanic disenrollees;
- A higher percentage of disenrollees going to another MMC plan;

Table 23
Results for final full regression model of 2001 MMC disenrollment rates

N = 163	Unstandardized coefficients		Standardized coefficients
	B	Std. Error	Beta
(Constant)**	-4.690	0.811	
Reported poor or fair health**	-3.338	0.725	-0.315
Did not graduate high school*	1.214	0.547	0.143
Hispanic(*)	1.071	0.552	0.129
Left to go to another MMC plan*	0.573	0.224	0.173
Left after less than 3 months(*)	-1.966	0.757	-0.187
Average rating of health plan*	-0.150	0.073	-0.168
Problems getting doctors**	1.693	0.378	0.340
Problems getting particular needs met	0.477	0.693	0.055
Concerns about premiums**	1.251	0.351	0.297
Drug Coverage issues	0.356	0.505	0.052
Average AAPPC in plan's service area**	0.003	0.001	0.290
For profit status**	0.314	0.102	0.181
Years in operation	-0.001	0.009	-0.009
Households with householder ≥ 65, that have < \$30,000 annual income (1999 dollars)	0.193	0.932	0.014
MDs per 1,000 elderly	-0.011	0.008	-0.082
Population underserved by primary care physicians**	0.036	0.011	0.190
n = 163; F=16.3** Adj. R ² = .60			

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

(*)Significant at the 90% level of confidence.

- A lower rating of plans;
- A higher percentage of disenrollees citing problems getting doctors;
- A higher percentage of disenrollees citing concerns about premiums or copayments being too high;
- For profit tax status;
- Higher MMC payments in the MCO's service area; and
- A higher percentage of state population underserved by primary care physicians.

Table 24
Results for final reduced regression model of 2001 MMC disenrollment rates

	Unstandardized coefficients		Standardized coefficients
	B	Std. Error	Beta
(Constant)**	-4.530	0.705	
Reported poor or fair health**	-2.946	0.671	-0.278
Did not graduate high school**	1.300	0.500	0.153
Hispanic*	1.017	0.505	0.123
Left to go to another MMC plan**	0.676	0.203	0.204
Left after less than 3 months**	-2.154	0.708	-0.205
Average rating of health plan**	-0.193	0.063	-0.216
Problems with doctors**	1.668	0.361	0.335
Concerns about premiums**	1.315	0.327	0.312
Average MMC payments in MCO service area**	0.003	0.001	0.285
For profit status**	0.365	0.093	0.211
Population underserved by primary care physicians**	0.034	0.010	0.177
F = 23.6 (p < .001) Adj. R ² = .61			

**Significant at the 99% level of confidence.

*Significant at the 95% level of confidence.

CHAPTER 6 CONCLUSIONS

6.1 Summary of Findings

The findings from the beneficiary- and plan-level analyses are summarized and synthesized in this section. First we summarize the bivariate analysis and then we summarize the multivariate analyses conducted at the beneficiary level. Then we compare and contrast the findings between the bivariate and the two different types of multivariate analysis. We conclude this section with a summary of the multivariate plan-level results.

6.1.1 Descriptive Beneficiary-Level Analysis Summary

For the descriptive beneficiary-level analysis, we were interested in the question: for each **reason grouping**, which subgroups of MMC plan voluntary disenrollees are *more likely* than other disenrollees to leave? We summarize the findings as follows: we state the frequency of citation for each reason group type in parenthesis (i.e., All Reasons %, MIR %), followed by a list the subgroups significantly more likely to cite the reason.

- **Copayments/Coverage (55%, 10%):** under 65 disabled (vs. 65–69), poor to fair health (vs. excellent).
- **Premium/Costs (54%, 31%):** under 65 disabled (vs. 65–69), dually eligible (vs. not dually eligible)
- **Doctor Access (41%, 27%):** College graduates (vs. no high school), not dually eligible (vs. dually eligible)
- **Plan Information (38%, 8%):** under 65 (vs. 65–69), Hispanic (vs. non-Hispanic Caucasian), African American (vs. non-Hispanic Caucasian), poor to fair health (vs. excellent), dually eligible (vs. not dually eligible), no high school (vs. college graduates)
- **Drug Coverage (31%, 10%):** under 65 disabled (vs. 65–69), poor to fair health (vs. excellent)
- **Care Access (29%, 7%):** under 65 disabled (vs. 65–69), Hispanic (vs. non-Hispanic Caucasian), dually eligible (vs. not dually eligible), poor to fair health (vs. excellent)
- **Other Care or Service (27%, 5%):** Hispanic (vs. non-Hispanic Caucasian), poor health (vs. excellent)
- **Specific Needs (23%, 3%):** under 65 disabled (vs. 65–69), dually eligible (vs. not dually eligible), poor to fair health (vs. excellent)

For the descriptive beneficiary-level analysis, we were also interested in the question: for each **beneficiary subgroup**, for which reasons are beneficiaries in this subgroup *more likely* than

other disenrollees to leave? We list the subgroups significantly more likely to cite specific reasons, followed by a list of the reasons found more likely:

- **Under 65 disabled (vs. 65–69):** problems with Plan Information, Care Access, Specific Needs, Premium/Costs, Copayments/Coverage, and Drug Coverage
- **Poor to fair health (vs. excellent health):** problems with Plan Information, Care Access, Specific Needs, Copayments/Coverage, and Drug Coverage
- **Less than high school education (vs. college graduate):** problems with Plan Information
- **Hispanic (vs. non-Hispanic Caucasian):** problems with Plan Information, Care Access, and Other Care or Service
- **African Americans (vs. non-Hispanic Caucasian):** problems with Plan Information
- **Dually eligible (vs. not dually eligible):** problems with Plan Information, Care Access, Specific Needs, and Premium/Costs issues.

6.1.2 Multivariate Beneficiary-Level Analysis Summary

One research question of interest asked whether beneficiaries in some subgroups of MMC plan voluntary disenrollees were more likely to cite specific reasons for disenrollment, once confounding contextual factors were held constant statistically. The multivariate beneficiary-level analysis found that, even controlling for confounding by plan-level, market-level, and other subgroup characteristics, there were significant differences among the subgroups in the reasons cited for disenrollment. In fact, once these sources of confounding were controlled for statistically, we found significant differences across subgroups that were not always apparent in the descriptive (bivariate) analysis, especially for the MIR. In general, we found consistency between the binary logistic analysis of the All Reasons and the GLM analysis of the MIR. In what follows, we summarize the GLM results and compare these with the individual logit results on a **subgroup-by-subgroup** basis. In particular, we found that:

- The **most elderly** were more likely than the younger elderly to cite Plan Information or Care than Premium & Copays (the reference reason), but less likely to cite Drug Coverage than Premium & Copays.
- The **non-elderly disabled** were less likely to cite Doctor Access or Care and more likely to cite Drug Coverage than Premium & Copays. These findings are particularly interesting because, in the individual logistic analysis of All Reasons, we found that the non-elderly disabled were more likely (than younger elderly beneficiaries) to cite both Drug Coverage and Premium/Costs reasons, but we could not assess the relative importance of Drug Coverage and Premium & Copays for this group.

- All other **racess/ethnicities** were less likely than non-Hispanic Caucasians to state Doctor Access versus Premium & Copays as their MIR. This finding is interesting because, in the individual logistic analysis of All Reasons, we found that only African Americans were less likely (than non-Hispanic Caucasians) to cite Doctor Access, and only African Americans were more likely (than non-Hispanic Caucasians) to cite Premium/Costs.
- Results suggest that beneficiaries with less than a high school **education** were less likely to cite problems with Doctor Access or Care than Premium & Copays as their MIR. Because individuals with less education generally have lower income, this finding is consistent with what one might expect.
- Individuals with worse **self-assessed health status** were significantly more likely (than those in better health) to indicate that Care, Doctor Access, and Drug Coverage reasons were more important than Premium & Copays. This helps us understand the relative importance of Care and Drug Coverage reasons to Premium & Copays for the sicker group. In the individual logistic analysis of All Reasons, we found consistent results for the Care and Drug Coverage reasons, but found no significant relationship between health status and Copayments/Coverage or Premium/Costs reasons.
- Beneficiaries who **disenrolled to another MMC plan**, instead of the FFS plan were less likely to cite Plan Information and Care reasons, and more likely to cite Drug Coverage, than Premium & Copays. This is consistent with the binary logit results, but, for the latter, we were not able to assess the relative ranking of Premium/Costs or Copayments/Coverage versus these other reasons for disenrollment.
- The findings for the individual's reported **satisfaction with their health plan** suggest that people who rated their plan lower were more likely to cite all other reasons than Premium & Copays as their MIR, with larger impacts from the Plan Information and Care groups relative to Premium & Copays. These findings are consistent with the binary logit results, where we saw the clearest satisfaction gradient for the Plan Information and Care groups, but were not able to determine the relative importance of Premium & Copays.

Another research question asked, "What plan and market characteristics are associated with beneficiaries citing specific reasons for disenrollment?" As shown below, we found that various plan- and market-level effects were important determinants of disenrollment decisions:

- **In plans offering Drug Coverage:** disenrollees were more likely to cite problems with Doctor Access, Care, Other Care or Service problems, and problems with Plan Information as reasons for disenrollment compared to disenrollees from plans that did not offer drug coverage; beneficiaries were more likely to cite Doctor Access and less likely to cite Plan Information than Premium & Copays as the MIR.
- **In plans with longer tenure in operation:** disenrollees were more likely to cite problems getting Doctor Access or getting care as reasons for disenrollment;

beneficiaries were more likely to cite Doctor Access, Care, or Drug Coverage than Premium & Copays as their MIR.

- **In plans with a larger share of the Medicare market:** disenrollees were more likely to cite problems getting Care but less likely to cite Plan Information, Doctor Access, Specific Needs, Copayments/Coverage, or Drug Coverage as reasons for disenrollment; beneficiaries were less likely to cite any reasons as more important than Premium & Copays for the MIR.
- **In markets with higher private-sector managed care penetration:** disenrollees were more likely to cite problems with Specific Needs or problems with Drug Coverage as a reason for disenrollment; disenrollees were less likely to cite any reason than the Premium & Copays reasons as the MIR.
- **In more urban neighborhoods:** disenrollees were more likely to cite problems with Doctor Access, Copayments/Coverage, or Drug Coverage as reasons for disenrollment; disenrollees were more likely to cite all other reasons besides Premium & Copays (except care) as their MIR.
- **In states where there was a shortage of physicians:** disenrollees were more likely to cite problems with Doctor Access, Specific Needs, or concerns about copayments/coverage or Drug Coverage as reasons for disenrollment, but they were less likely to cite Care or Premium/Costs reasons; beneficiaries were less likely to cite problems obtaining Drug Coverage than Premium & Copays as their MIR.

A third research question examined how contextual plan- and market-level factors interacted in their influences on beneficiary decisions, specifically the MIR for disenrollment. The multivariate beneficiary-level analysis found that the effects of various plan- and market-level factors were highly nonlinear and interactive, suggesting significant geographic variation in choice environments from place to place. For the plan-level and market-level effects, the generalized logit model of the MIR allowed for greater complexity and nonlinearity in estimation (than did the binary logit models for the All Reasons), and we focused the summary on those results. In particular:

- Whether a beneficiary had access to drug coverage was the most influential variable in the model. The highly significant interactions of drug coverage with four continuous plan- and market-level variables (number of years plan had been in operation, plan's market share, private market managed care penetration, measure of physician shortage) indicates that the effects that these plan- and market-level variables had on determining the most important reasons for leaving was quite dependent on whether a plan offered some drug coverage or no drug coverage. However, because other variables describing other aspects of benefits generosity were not included in the model for parsimony, and these variables were positively correlated with drug coverage, it is perhaps best to interpret the Drug Coverage variable as a proxy for benefit generosity.

- The main effect of drug coverage on MIR was significant at the 95 percent level of confidence. Beneficiaries with some drug coverage were less likely to cite Plan Information than Premium & Copays, and more likely to cite Doctor Access than Premium & Copays. This variable has several highly significant interactions with market-level variables.
- Individuals in plans with longer tenure with Medicare were less likely to cite Premium & Copays as their MIR, and were more likely to cite problems with Doctor Access or Drug Coverage—but only if drug coverage was not available. When drug coverage was available, an individual was more likely to state Premium & Copays as their MIR than the other four reasons.
- When the continuous variable measuring the plan's share of the Medicare market in its service area is interacted with drug coverage, results suggest that if no drug coverage was offered, and as a plan's market share increased, an individual was more likely to cite Premium & Copays as their MIR than one of the other four reasons. However, when some drug coverage was provided, this effect was greatly nullified—plan market share had little to no effect on these other three reasons.
- Greater private managed care penetration in the beneficiary's neighborhood tended to increase the probability that a beneficiary would state Premium & Copays as their MIR. However, beneficiaries with some drug coverage were more likely to cite problems with Plan Information, Doctor Access, Care, or Drug Coverage than Premium & Copays as their MIR (than beneficiaries with no drug coverage).
- Beneficiaries in states with greater perceived physician shortages were significantly less likely to cite Drug Coverage than Premium & Copays as their MIR. The physician shortage variable is significant when interacted with two other variables simultaneously: whether the beneficiary disenrolled to an MMC or FFS plan, and whether the beneficiary had drug coverage. Results suggest that the Premium & Copays reason was more important when there was a shortage of physicians and beneficiaries had returned to another Medicare HMO. Conversely, in these shortage situations, Doctor Access was more important than Premium & Copays when the beneficiary had returned to FFS.
- The interaction between physician shortage and drug coverage suggests that, in areas with greater physician shortages, Premium & Copays was less likely to be cited than all other reasons, when the beneficiary had some drug coverage. For beneficiaries in these shortage areas and without drug coverage, the Doctor Access reason was more likely to be cited than Premium & Copays.
- Beneficiaries living in markets with greater managed care penetration were typically more likely to cite Premium & Copays than other reasons as their MIR for disenrolling. The interaction of private managed care penetration with plan's Medicare market share suggests that, as either or both plan share and managed care penetration increase, the other four reasons became more important relative to Premium & Copays. This suggests that, for beneficiaries living in states with higher

managed care penetration and in local markets dominated by a large Medicare HMO plan, other problems besides Premium & Copays were of more concern to beneficiaries.

6.1.3 Comparability of Binary and Multivariate Findings

We found that results were fairly consistent across the various forms of the beneficiary analyses. In comparing the bivariate to the multivariate analyses, some bivariate results were no longer significant once confounding factors were controlled statistically in the multivariate models. Especially for the MIR, the multivariate models found significant subgroup effects where none were found in the bivariate analysis, suggesting that confounding was obscuring these relationships in the bivariate analysis.

Tables 25 and 26 show the agreement between the bivariate findings (for 2000 and 2001) and the corresponding multivariate findings (for 2001). **Tables 27 and 28** show and compare significant findings for the two multivariate models (All Reasons logits, MIR GLM).

In **Table 25**, we see that some significant bivariate findings (e.g., “disabled/< 65 more likely than those aged 55 to 69 to cite problems with Plan Information”) are not statistically significant in the corresponding multivariate model (binary logistic model of All Reasons). Meanwhile, other relationships identified in the bivariate analyses were still observed even after controlling for other covariates. For example, Hispanic beneficiaries were still more likely to cite problems with plan information as *a* reason (but not necessarily their *most important* reason) for leaving even after controlling for differences in the level of beneficiaries’ education. Also of interest is the fact that there were few significant relationships found in the bivariate analysis of the MIR. In **Table 26**, we see that about half of these are upheld by the corresponding multivariate model (the GLM of MIR). Columns in **Table 26** that appear blank portray MIR with no significant bivariate findings. However, in contrast, the multivariate MIR (**Table 9**, **Table 28**) has some significant findings for every reason.

One interesting finding from the bivariate comparisons in **Table 25** is that dual eligibility status became a significant predictor for the Premium/Costs reason in 2001, while it was not significant in 2000; this finding existed in the multivariate analysis as well (**Table 8**, **Table 27**).

While the All Reasons and MIR results are consistent in general areas, one must be mindful that the MIR (**Table 28**) findings are for reasons cited “relative to the Premium & Copays reasons.” The binary logits (**Table 27**) findings are for each particular reason group in isolation. This, and the fact that the MIR collapses several of the All Reasons categories, obscures the comparisons somewhat. For example, the dual eligibility status variable was not significant for the MIR analysis, where we combined Premium & Copays into a single reason—whereas dual eligibility was significant for the Premium/Costs among All Reasons. Other differences, notably those regarding drug coverage and market variables, are most likely due to the fact that the GLM analysis of the MIR included the specification of interactions with these variables, unlike the individual logit analysis of the All Reasons. Thus, some of the differences in the All Reasons and MIR findings may stem from less complete model specification in the All Reasons models. Other differences may be a result of the distinction between a reason being the

most important reason for leaving a plan, rather than just *a reason*, or because a subset of disenrollees did not specify a *most important reason*.

6.1.4 Findings from Multivariate Plan-Level Analysis

Although the findings from the plan-level analysis of disenrollment rates should be considered tentative since they are based on only one year of data, it appears that higher disenrollment rates were more likely to be associated with beneficiaries leaving plans due to provider issues and costs, rather than problems with the quality of care. This is further supported by the fact that higher disenrollment rates were associated with fewer disenrollees reporting poor or fair health. However, higher disenrollment was associated with a greater number of Hispanic disenrollees and more disenrollees without a high school education. Higher disenrollment rates were also associated with some specific plan and market characteristics, such as for-profit tax status, lower ratings of plan in the past, more disenrollment to other MMC organizations (rather than to Original Medicare), higher payment rates to MMC organizations, and lower availability of physicians in the state. In other words, disenrollment rates appear to be a better measure of “health care market” performance than of “health care quality” performance.

6.2 Limitations of the Analyses and Directions for Future Research

The survey was designed to sample beneficiaries in a manner that would yield the best information possible for plan-level reporting. The survey design weights were thus not entirely appropriate for beneficiary-level analysis. In addition, because multiple beneficiaries belonged to the same plans and resided in the same markets, there was a commonality among the individual-level observations in some of the data fields. This redundancy will cause downward bias on standard errors, making results seem more significant than they were. Because plans spanned several counties, there was no way to perfectly control for this complex redundancy in our logistic models. We experimented with county-level control for intra-cluster correlation, then with plan-level control for intra-cluster correlation, and found similar results using either correction (we could not do both simultaneously). Because the sample was so large and there is a possibility that standard errors are biased downwards, we used a fairly stringent significance level (1 percent) as an offset, which is a conservative approach that may be warranted in this situation.

The GLM model in particular required a parsimonious specification, because it was heavily parameterized with interaction and quadratic terms. We attempted to find the best variable among a group of possible candidates to reflect a particular aspect of the contextual environment. For example, “whether or not drug coverage was offered by the plan,” was one of several plan benefit variables we might have chosen. These benefit variables were highly correlated in the dimension of better coverage (lower copays, better drug benefits, etc.). We chose the variable reflecting drug coverage because it was the most powerful discriminator at the market level in our analysis of the coincidence of reasons. Because of this parsimony in model specification, it is important to recognize that the drug coverage variable is simply a proxy for “better coverage,” because those other coverage variables not included in the model are

Table 25
Bivariate (2000 and 2001) All Reasons factor categories compared with multivariate models

(Reference category)	Plan Information	Doctor Access	Care Access	Specific Needs	Other Care or Services	Premium/ Costs	Copayments/ Coverage	Drug Coverage
Age (65–69)	(<65†)		(<65†)	<65 ↑		<65 ↑	(<65†)	<65 ↑
Gender (female)								
Race/Ethnicity (non-Hispanic Caucasian)	Hispanic ↑ African American ↑		Hispanic ↑		Hispanic ↑			
Education (college)	(<9 th gr ↑)	<9 th gr ↓						
Dual Eligibility (not DE)	(DE ↑)	DE ↓	(DE†)	(DE†)		DE ↑^a		
Health Status (excellent)	Poor-fair ↑		Poor-fair ↑	Poor-fair ↑	(Poor†)		Poor-fair ↑	Poor-fair ↑
Destination (FFS)	To MMC ↓		To MMC ↓					

^a2001 only

Relationships in **bold** upheld in corresponding multivariate model.

Relationships in (parentheses) found in bivariate analysis that were not found in multivariate analysis.

Table 26
Bivariate (2000 and 2001) MIR factor categories compared with multivariate models

(Reference category)	Plan Information	Doctor Access	Care Access	Specific Needs	Other Care or Services	Premium/ Costs	Copayments/ Coverage	Drug Coverage
Age (65–69)		< 65 ↓						
Gender (female)								
Race/Ethnicity (non-Hispanic Caucasian)		Hispanic ↓						
Education (college)		< 9 th gr. ↓						
Dual Eligibility (not DE)		(DE↓)						
Health Status (excellent)						(Poor-good↓)		
Destination (FFS)		(To MMC↑)						

^a2001 only

Relationships in **bold** upheld in corresponding multivariate model.

Relationships in (parentheses) found in bivariate analysis that were not found in multivariate analysis.

Table 27
Logistic regression results (2001) for All Reasons models compared with MIR model

(Reference category)	Plan Information	Doctor Access	Care Access	Specific Needs	Other Care or Services	Premium/ Costs	Copayments/ Coverage	Drug Coverage
Age (65–69)	(70–74↓) (80+↓)			<65 [*] ↑		(<65↑) (80+↓)	(80+ ↓)	<65 ↑ 80+↓
Gender (female)		(Male↓)			(Male↓)	(Male ↑)		
Race/Ethnicity (non-Hispanic Caucasian)	(Hispanic↑) (African American↑)	African American↓	Hispanic ↑		Hispanic ↑	(African American ↑)	(African American ↓)	
Education (college)		(9 th gr. ↓)	HS grad ↓	(HS grad ↓)		(< 12 th gr. ↑)		
Dual Eligibility (not)		(Dual elig ↓)				(Dual elig ↑)		
Health Status (excellent)	(Poor-fair ↑)		Poor-fair ↑	Poor-fair ↑			(Poor-fair ↑)	Poor-good ↑
Destination (FFS)	To MMC ↓		To MMC ↓	To MMC ↓				To MMC ↑
Plan rating (rating of 10)	Rate low ↑	Rate low ↑	Rate low ↑	Rate low ↑	Rate low ↑			Rate low ↑
Drug Coverage (none)	<i>Some ↑[*]</i>	Some ↑	Some ↑		(Some ↑)	(Some ↓)		Some ↑
Years in operation		↑	↑			(↓)		↑
Market share	↓	↓	↑ [*]	↓			(↓)	
MC penetration			↓	↑ [*]			(↑)	↑ [*]
% Urban		↑			(↓)		(↑)	↑
% Poor				↑		(↓)	(↑)	↑
MD shortage		(↑)	(↓)	(↑)		(↓)	(↑)	↑ [*]

Relationships in **bold** were consistent in All Reasons and MIR models^{*}

^{*} *Opposite relationships in All Reasons and MIR models*

(Relationships found in Logistic All Reasons Model that were not significant in the Generalized Logit MIR Model)

Table 28
Generalized Logistic Model (GLM) results (2001) for MIR model compared with All Reasons models

(Reference category)	Plan Information vs. Premium & Copays	Doctor Access vs. Premium & Copays	Care vs. Premium & Copays	Premium & Copays (Reference reason)	Drug Coverage vs. Premium & Copays
Age (65–74)	(75+ ↑)	(<65 ↓) (75+ ↑)	<65 ↓ [*] (75+ ↑)		<65 ↑ 75+ ↓
Gender (female)					
Race/Ethnicity (non-Hispanic Caucasian)		(Hispanic ↓) African American ↓ (Other ↓)	Hispanic ↑		
Education (hs grad)		< HS grad ↓	< HS grad ↓		
Dual Eligibility (Not DE)					
Health Status (excel-good)		Poor-good ↑	Poor-good ↑		Poor-good ↑
Destination (FFS)	To MMC ↓		To MMC ↓		To MMC ↑
Plan rating (rating of 10)	Rate low ↑	Rate low ↑	Rate low ↑		Rate low ↑
Drug Coverage (none)	<i>Some</i> ↓ [*]	Some ↑			Some ↑
Years in operation		↑	↑		↑
Market share	↓	↓	↓ [*]		(↓)
MC penetration	(↓)	(↓)	↓ [*]		↓ [*]
% Urban	(↑)	↑			↑
% Poor	(↑)	(↑)	↑		↑
MD shortage					↓ [*]

Relationships in **bold** were consistent in All Reasons and MIR models.

^{*} *Opposite relationship in All Reasons and MIR models.*

(Relationships found in GLM Model of MIR that were not significant in the Logistic All Reasons Model)

positively correlated with it. Thus one cannot place too literal an interpretation on the drug coverage coefficients, as though we were examining that aspect “holding all others constant” (because we are not).

In addition, the benefits variables are not perfectly defined for each beneficiary. Caution is advised before drawing any conclusions about the noticeable absence of the premiums and benefits offered by an MCO as significant factors in the modeling of individual-level reasons for leaving or the plan-level disenrollment rates. Although the reader might assume that the absence of these characteristics implies that they have no relationship with disenrollment reasons or rates, this absence is more likely related to limitations in the underlying data. Prior to 2002, CMS’ administrative records only tracked the MCO where a beneficiary enrolled, not the specific benefit plan within the MCO under which the enrollee was covered. Consequently, this analysis was based on a general assumption that enrollees would sign up for the least costly, most generous plan offered by an MCO. This assumption may distort the findings. Also, some of the reasons for leaving were highly correlated with plan coverage and may be serving as a proxy for actual benefits.

An additional caveat about the benefits data used in these analyses is that the benefits examined reflect only a small subset of the entire range of covered services for Medicare managed care enrollees. Furthermore, not only was the range of services quite broad but there was also considerable variation across plans in the nature and extent of coverage for these services. This variation was not necessarily captured within the subset of benefits selected for inclusion in these analyses. The subset of covered services was primarily selected based on high utilization, high cost, or large variation in levels of coverage. These benefits were also assumed to be the ones that would be of most interest to the majority of beneficiaries.

Finally, when interpreting the results from the GLM model, one must keep in mind that the parameter estimates reflect a hypothetical situation that was created to model the underlying variation in the data. As is true in linear regression analysis as well, one must be careful not to “extrapolate beyond the range of the data.” In linear regression, results are most reliable at the “point of means” (where all variables are at their sample means), but there is usually no such observation in reality. By analogy, the GLM allows for complex interactions and nonlinear structures that can perfectly describe the underlying data (in the fully saturated form of the model). When we interpret the coefficients, we can posit particular scenarios (high plan market share, very urbanized area, no drug coverage) but places such as this may not, in fact, exist. For robust reporting, the researcher could use cartographic methods to examine the joint spatial distribution of the data, identify plausible scenarios, and then interpret coefficients in these more realistic scenarios. This might be an interesting area for future research. Whether or not this is done, the GLM model is very capable of controlling statistically for the myriad of confounding plan- and market-level variables, so that we can reliably examine the independent impacts of subgroup variables on reasons for disenrollment.

The plan-level and market-level interactions summarized above for the beneficiary-level analysis derive from the generalized logit model’s ability to flexibly characterize the joint distribution of covariates that have different groupings in different places. Markets with specific combinations of factors may be of particular policy importance to CMS. For example, CMS may be interested in plotting markets with dominant plans (large market share) that have been in

operation for many years. Using a spatial query, one could easily identify where specific combinations of market characteristics coincide in a geographic setting, or whether specific combinations actually exist. This would be a useful extension of the GLM analysis, as particular policy scenarios could be examined in real-world settings.

While several of the plan characteristics and all of the market characteristics may be outside of an MMC organization's control, one observation from the plan-level analysis of disenrollment rates that should be of particular interest to MMC organizations is the relationship between lower plan ratings from a prior year and higher disenrollment rates. This clearly suggests a causal association between dissatisfaction and subsequent disenrollment. Further research into the factors that contribute to beneficiaries' ratings of plans may identify areas for improvement that would not only improve levels of satisfaction but also serve as a means of increasing member retention. Furthermore, combining several years' worth of disenrollment rates would offset the problems associated with examining disenrollment among the reduced number of organizations that participate in the Medicare managed care program. By increasing the sample of plans in this manner, we could then incorporate additional variables into our modeling, including the improved benefit variables, to improve our understanding of plan-level disenrollment rates.

Future modeling can also take advantage of the improved data that will be available on premiums and benefits. We will be able to incorporate the specific premiums and benefits that apply for each plan member (rather than the current approach of assuming all enrollees under the same contract opt for the same benefit plan). We will also be able to investigate whether to continue incorporating information on coverage for a specific subset of services, or whether to supplement or replace these data with the actuarial estimates of out-of-pocket spending, such as those that are now available to consumers on [medicare.gov](https://www.medicare.gov)'s Personal Plan Finder.

One potentially surprising fact emerged in 2001, which was not evident in 2000: dually eligible beneficiaries became concerned about premiums. This may be due to the reduction in plans that offered zero-premium plans that took place between 2000 and 2001. While some states adjusted their contractual arrangements with plans to be sure that those who were dually eligible for Medicare and Medicaid would not have to pay any nonzero premiums, other states did not pursue such arrangements. This means that some dually eligible beneficiaries whose Medicare Part B premiums, coinsurance, and deductibles were covered may still have been billed for the Medicare managed care premium. Breaking apart the complexities of the different eligibility requirements and coverage arrangements for the dually eligible are beyond the scope of this report, but further investigation and tracking of this phenomenon over time may be important.

Finally, some of the variation in findings between the All Reasons and the Most Important Reasons (MIR) is due to different model specifications, since the modeling of the latter accounted for interaction between some variables. Other differences may be inherent, due to the fact that All Reasons capture any, and often many, possible reasons for leaving a plan, versus the single Most Important Reason for leaving. While CMS' strategy of reporting the latter type of reason is clearly justifiable according to a number of criteria, additional research is underway to better understand how a disenrollee who cites multiple reasons for leaving decides

which reason is their *most important* reason, and why some disenrollees who have cited multiple reasons do not identify a *single* MIR, either giving no or multiple MIRs.

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Appendix A
2001 Medicare CAHPS
Disenrollment Reasons Questionnaire

APPENDIX A

2001 MEDICARE CAHPS DISENROLLMENT REASONS QUESTIONNAIRE

Foreword

Differences Between Qtr. 1 and Qtrs. 2–4 of the 2001 Reasons Survey Instrument:
Seven questions in the Quarter 1 instrument about appeals and complaints were replaced by seven questions in the Quarter 2 instrument:

Quarter 1 (January – March 2001)	Quarters 2 – 4 (April – December 2001)
48. When you were a member of [MEDICARE HEALTH PLAN NAME], was there ever a time when you strongly believed that you needed and should have received health care or services that [MEDICARE HEALTH PLAN NAME] or your doctor decided not to give you?	48. Sometimes people cannot get their health plan to provide or pay for services that they think they need. Were you ever told by [MEDICARE HEALTH PLAN NAME] how to file a formal complaint if this happened to you?
49. Did you receive information in writing from [MEDICARE HEALTH PLAN NAME] or your doctor on how to file a formal complaint about their decision not to provide the health care or services that you strongly believed that you needed?	49. Was there ever a time when you strongly believed that you needed and should have received health care or services that [MEDICARE HEALTH PLAN NAME] or your doctor decided not to give you?
51. As far as you know, did you have the right to appeal if [MEDICARE HEALTH PLAN NAME] decided not to provide or pay for care and services that you believed you needed?	51. If [MEDICARE HEALTH PLAN NAME] decided not to provide or pay for care that you believed you needed, did you know who to contact at [MEDICARE HEALTH PLAN NAME] to ask them to reconsider?
52. As far as you know, did your doctor have the right to appeal if [MEDICARE HEALTH PLAN NAME] decided not to provide or pay for health care and services that you believed you needed?	52. Did you ever ask [MEDICARE HEALTH PLAN NAME] to reconsider a decision to not provide or pay for a treatment?
53. As far as you know, if your appeal was denied, would [MEDICARE HEALTH PLAN NAME] automatically refer it to another organization for an independent review?	53. If [MEDICARE HEALTH PLAN NAME] decided not to provide or pay for a particular treatment, could your doctor have contacted someone at the plan and asked them to reconsider?
54. As far as you know, did you have the right to ask for another review by a judge if this independent organization turned down your appeal to [MEDICARE HEALTH PLAN NAME]?	54. If [MEDICARE HEALTH PLAN NAME] decided not to reconsider providing or paying for a particular treatment, would [MEDICARE HEALTH PLAN NAME] have automatically referred it to another organization for an independent review?
55. Did you ever file an appeal with [MEDICARE HEALTH PLAN NAME]?	55. If this independent organization turned down your request for reconsideration to [MEDICARE HEALTH PLAN NAME], did you have the right to ask for another review by a judge?

One question was added to the Quarter 2 instrument that was not included in the Quarter 1 instrument:

57. In general, how would you rate your overall mental health now?

Two questions were changed slightly in terms of their wording or placement in the questionnaire:

58. In general, would you say your health is:

59. Compared to one year ago, how would you rate your health in general now?



2001 Medicare Satisfaction Survey^{-DR}



CAHPS[®]
Consumer Assessment
of Health Plans

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0938-0779. The time required to complete this information collection is estimated to average 15 minutes per response, including the time to review instructions, search existing data sources, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to: CMS, 7500 Security Boulevard, N2-14-26, Baltimore, Maryland 21244-1850, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

Instructions for Completing This Questionnaire

This questionnaire asks about you and your experiences in a Medicare health plan. Answer each question thinking about yourself. Please take the time to complete the questionnaire because your answers are very important to us.

- Please use a BLACK ink pen to mark your answers.
- Be sure to read all the answer choices before marking your answer.
- Answer all the questions by putting an "X" in the box to the left of your answer, like this:

☐ Yes

☒ No → **Go to Question 3**

- You will sometimes be instructed to skip one or more questions, depending on how you answered an earlier question. When this happens, you will see an arrow with a note that tells you what question to answer next, as shown in the example above.

If the answer you marked is not followed by an arrow with a note telling you where to go next, then continue with the next question, as shown below.

EXAMPLE

1. Do you wear a hearing aid now?

☒ Yes

☐ No → **Go to Question 3**

2. How long have you been wearing a hearing aid?

☐ Less than 1 year

☒ 1 to 3 years

☐ More than 3 years

☐ I don't wear a hearing aid

3. In the last 6 months, did you have any headaches?

☐ Yes

☒ No

Please go to the top of the next page and begin with Question 1.

**IMPORTANT:
PLEASE READ BEFORE
BEGINNING THE QUESTIONNAIRE**

Our records show that you were a member of [HEALTH PLAN NAME] and that you left that plan for some period of time during the last 6 months.

If this is correct, please complete this questionnaire about the reasons why you left [HEALTH PLAN NAME].

If you did not leave [HEALTH PLAN NAME], or if you were never enrolled in that plan, please call us toll-free at 1-877-834-7063 and let us know.

**REASONS YOU LEFT
[MEDICARE HEALTH PLAN
NAME]**

The following questions ask about reasons you may have had for leaving [MEDICARE HEALTH PLAN NAME].

Just as it is important for us to learn why you left [MEDICARE HEALTH PLAN NAME], it is also important for us to know what reasons did not affect your decision to leave that plan.

Therefore, please mark an answer for every question below unless the instruction beside the answer that you mark tells you to stop and return the questionnaire, or to skip one or more questions.

PLAN AVAILABILITY

1. Did you leave [HEALTH PLAN NAME] because the plan left the area or you heard that the plan was going to stop serving people with Medicare in your area?

☐ Yes → **STOP.** Do not answer the rest of these questions. Please put your questionnaire in the postage-paid envelope and mail it back to us. Thank you.

☐ No

2. Did you leave because you moved outside the area where [HEALTH PLAN] was available?

☐ Yes → **STOP.** Do not answer the rest of these questions. Please put your questionnaire in the postage-paid envelope and mail it back to us. Thank you.

☐ No

3. Did you leave [HEALTH PLAN NAME] only because you found out that someone had signed you up for the plan without your knowledge (for example, a relative, salesperson, or someone else)?

☐ Yes → **STOP.** Do not answer the rest of these questions. Please put your questionnaire in the postage-paid envelope and mail it back to us. Thank you.

☐ No

4. Did you leave [HEALTH PLAN NAME] only because of a paperwork or clerical error (for example, you were accidentally taken off the plan)?

☐ Yes → **STOP. Do not answer the rest of these questions. Please put your questionnaire in the postage-paid envelope and mail it back to us. Thank you.**

☐ No

5. Some people leave their Medicare health plan because their former employer no longer offers the plan. Did you leave [MEDICARE HEALTH PLAN NAME] because your former employer no longer offered [MEDICARE HEALTH PLAN NAME] to you?

☐ Yes

☐ No

☐ I was not enrolled in this plan through a former employer.

6. A premium is the amount that you pay to receive health care coverage from a health plan. Some health plans charge a premium to people on Medicare who are enrolled in that health plan.

This additional premium that the health plan charges is separate from the premium that people on Medicare pay for Medicare Part B, which is usually deducted from their Social Security Check each month.

Some people have to leave their Medicare health plan because they cannot afford to pay the premium. Did you leave [MEDICARE HEALTH PLAN NAME] because you could not pay the monthly premium?

☐ Yes

☐ No

DOCTORS AND OTHER HEALTH PROVIDERS

A doctor or other health care provider can be a general doctor, a specialist doctor, a physician assistant, or a nurse.

7. Did you leave [MEDICARE HEALTH PLAN NAME] because the plan did not include the doctors or other health care providers you wanted to see?

☐ Yes

☐ No

8. Did you leave [MEDICARE HEALTH PLAN NAME] because the doctor you wanted to see retired or left the plan?

☐ Yes

☐ No

9. Did you leave [MEDICARE HEALTH PLAN NAME] because the plan doctor or other health care provider you wanted to see was not accepting new patients?

☐ Yes

☐ No

10. Did you leave [MEDICARE HEALTH PLAN NAME] because you could not see the plan doctor or other health care provider you wanted to see on every visit?

☐ Yes

☐ No

11. Did you leave [MEDICARE HEALTH PLAN NAME] because the plan doctors or other health care providers did not explain things in a way you could understand?

☐ Yes

☐ No

12. Did you leave [MEDICARE HEALTH PLAN NAME] because you had problems with the plan doctors or other health care providers?

☐ Yes

☐ No

13. **Specialists** are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and others who specialize in one area of health care.

Did you leave [MEDICARE HEALTH PLAN NAME] because you had problems or delays getting the plan to approve referrals to specialists?

- ☐ Yes
☐ No

ACCESS TO CARE

14. Did you leave [MEDICARE HEALTH PLAN NAME] because you had problems getting the care you needed when you needed it?

- ☐ Yes
☐ No

15. Did you leave [MEDICARE HEALTH PLAN NAME] because the plan refused to pay for emergency or other urgent care?

- ☐ Yes
☐ No

16. Did you leave [MEDICARE HEALTH PLAN NAME] because you could not get admitted to a hospital when you needed to?

- ☐ Yes
☐ No

17. Did you leave [MEDICARE HEALTH PLAN NAME] because you had to leave the hospital before you or your doctor thought you should?

- ☐ Yes
☐ No

18. Did you leave [MEDICARE HEALTH PLAN NAME] because you could not get special medical equipment when you needed it?

- ☐ Yes
☐ No

19. Did you leave [MEDICARE HEALTH PLAN NAME] because you could not get home health care when you needed it?

- ☐ Yes
☐ No

20. Did you leave [MEDICARE HEALTH PLAN NAME] because you had no transportation or it was too far to the clinic or doctor's office where you had to go for regular or routine health care?

☐ Yes

☐ No

21. Did you leave [MEDICARE HEALTH PLAN NAME] because you could not get an appointment for regular or routine health care as soon as you wanted?

☐ Yes

☐ No

22. Did you leave [MEDICARE HEALTH PLAN NAME] because you had to wait too long past your appointment time to see the health care provider you went to see?

☐ Yes

☐ No

23. Did you leave [MEDICARE HEALTH PLAN NAME] because you wanted to be sure you could get the health care you need while you are out of town or traveling away from home?

☐ Yes

☐ No

INFORMATION ABOUT THE PLAN

24. Did you leave [MEDICARE HEALTH PLAN NAME] because you thought you were given incorrect or incomplete information at the time you joined the plan?

☐ Yes

☐ No

25. Did you leave [MEDICARE HEALTH PLAN NAME] because after you joined the plan, it wasn't what you expected?

☐ Yes

☐ No

26. Did you leave [MEDICARE HEALTH PLAN NAME] because information from the plan about things like benefits, services, doctors, and rules was hard to get or not very helpful?

☐ Yes

☐ No

PHARMACY BENEFIT

27. Did you leave [MEDICARE HEALTH PLAN NAME] because the maximum dollar amount the plan allowed each year (or quarter) for your prescription medicine was not enough to meet your needs?

☐ Yes

☐ No

☐ The plan that I left did not cover my prescription medicines.

28. Did you leave [MEDICARE HEALTH PLAN NAME] because the plan required you to get a generic medicine when you wanted a brand name medicine?

☐ Yes

☐ No

☐ The plan that I left did not cover my prescription medicines.

29. Did you leave [MEDICARE HEALTH PLAN NAME] because the plan would not pay for a medication that your doctor had prescribed?

☐ Yes

☐ No

☐ The plan that I left did not cover my prescription medicines.

COST AND BENEFITS

30. Did you leave [MEDICARE HEALTH PLAN NAME] because another plan would cost you less?

☐ Yes

☐ No

31. Did you leave [MEDICARE HEALTH PLAN NAME] because the plan would not pay for some of the care you needed?

☐ Yes

☐ No

32. Did you leave [MEDICARE HEALTH PLAN NAME] because another plan offered better benefits or coverage for some types of care or services?

☐ Yes

☐ No

33. A premium is the amount that you pay to receive health care coverage from a health plan. Some health plans charge a premium to people on Medicare who are enrolled in that health plan.

This additional premium that the health plan charges is separate from the premium that people on Medicare pay for Medicare Part B, which is usually deducted from their Social Security Check each month.

Did you leave the plan because [MEDICARE HEALTH PLAN NAME] started charging you a monthly premium, or increased the monthly premium that you pay?

☐ Yes

☐ No

☐ The plan I left did not start charging a premium, nor did it increase my premium.

The next two questions ask about co-pays or co-payments, which are the amounts that you pay for certain medical services such as office visits to your doctor, prescription medicines, and other services.

34. Did you leave because [MEDICARE HEALTH PLAN NAME] increased the co-payment that you paid for office visits to your doctor and for other services?

When answering this question, do not include co-payments that you may have paid for prescription medicines.

☐ Yes

☐ No

☐ The plan I left did not increase my co-payment for office visits.

35. Did you leave because [MEDICARE HEALTH PLAN NAME] increased the co-payment that you paid for prescription medicines?

☐ Yes

☐ No

☐ The plan I left did not increase my co-payment for prescription medicines.

OTHER REASONS

36. Did you leave [MEDICARE HEALTH PLAN NAME] because the plan's customer service staff were not helpful or you were dissatisfied with the way they handled your questions or complaint?

☐ Yes

☐ No

37. Did you leave [MEDICARE HEALTH PLAN NAME] because your doctor or other health care provider or someone from the plan told you that you could get better care elsewhere?

☐ Yes

☐ No

38. Did you leave [MEDICARE HEALTH PLAN NAME] because you or your spouse, another family member, or a friend had a bad experience with that plan?

☐ Yes

☐ No

39. Besides the reasons already asked about in Questions 5-38, are there any other reasons you left [MEDICARE HEALTH PLAN NAME]?

☐ Yes

☐ No → If no, go to Question 41 on the next page

40. On the lines below, please describe your other reasons for leaving [MEDICARE HEALTH PLAN NAME]. *(Please print.)*

Go to Question 41 on the next page

41. What was the one most important reason you left [MEDICARE HEALTH PLAN NAME]? *(Please print.)*

**YOUR EXPERIENCE WITH
[MEDICARE HEALTH PLAN
NAME]**

The next set of questions is about your experience with [MEDICARE HEALTH PLAN NAME].

42. At the time that you left [MEDICARE HEALTH PLAN NAME], did this plan cover some or all of the costs of your prescription medicines?

☐ Yes

☐ No

43. For about how many months were you a member of [MEDICARE HEALTH PLAN NAME] before you left?

☐ 1 month or less

☐ 2 months

☐ 3 months

☐ 4 months

☐ 5 months

☐ 6 months or more

Some of the following questions ask about the last 6 months you were in [MEDICARE HEALTH PLAN NAME]. If you were in this plan for less than 6 months, answer the questions thinking about the number of months that you were a member of that plan.

44. In the 6 months before you left [MEDICARE HEALTH PLAN NAME], how many times did you go to a doctor's office or clinic to get care for yourself? Do not count times you went to an emergency room to get care for yourself.

- ☐ None
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 to 9
- ☐ 10 or more

A personal doctor or nurse is the health provider who knows you best. This can be a general doctor, a specialist doctor, a physician assistant, or a nurse.

45. Did you get a new personal doctor or nurse when you were a member of [MEDICARE HEALTH PLAN NAME]?

- ☐ Yes
- ☐ No

Go to Question 46 on the next page

46. Think about all the health care you got from all doctors and other health providers in the 6 months before you left [MEDICARE HEALTH PLAN NAME].

How would you rate all the health care you got in the 6 months before you left [MEDICARE HEALTH PLAN NAME]?

Use any number from 0 to 10 where 0 is the worst health care possible, and 10 is the best health care possible.

- ☐ 0 → Worst health care possible
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10 → Best health care possible

47. Think about all your experience with [MEDICARE HEALTH PLAN NAME]. How would you rate [MEDICARE HEALTH PLAN NAME]?

Use any number from 0 to 10 where 0 is the worst Medicare health plan possible, and 10 is the best Medicare health plan possible.

- ☐ 0 → Worst Medicare health plan possible
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10 → Best Medicare health plan possible

APPEALS AND COMPLAINTS

An appeal is a formal complaint about a Medicare health plan's decision not to provide or pay for health care services or equipment or to stop providing health care services or equipment.

48. Sometimes people cannot get their health plan to provide or pay for services that they think they need. Were you ever told by [MEDICARE HEALTH PLAN] how to file a formal complaint if this happened to you?

☐ Yes

☐ No

49. Was there ever a time when you strongly believed that you needed and should have received health care or services that [HEALTH PLAN NAME] or your doctor decided not to give you?

☐ Yes

☐ No → If no, go to Instruction Box 1 in the next column

50. The Medicare Program is trying to learn more about the health care or services that Medicare health plan members believed they needed but did not get.

May we contact you again about the health care or services that you did not receive if we need more information?

☐ Yes

☐ No

☐ I was able to get the health care and services that I thought I needed when I was a member of this plan.

INSTRUCTION BOX 1

When answering Questions 51 through 55, please think about the time when you were a member of [MEDICARE HEALTH PLAN NAME].

51. If [MEDICARE HEALTH PLAN NAME] decided not to provide or pay for care that you believed you needed, did you know who to contact at [MEDICARE HEALTH PLAN] to ask them to reconsider?

☐ Yes

☐ No

☐ Don't Know

52. Did you ever ask [MEDICARE HEALTH PLAN] to reconsider a decision to not provide or pay for a treatment?

☐ Yes

☐ No

53. If [MEDICARE HEALTH PLAN] decided not to provide or pay for a particular treatment, could your doctor have contacted someone at the plan and asked them to reconsider?

☐ Yes

☐ No

☐ Don't Know

54. If [MEDICARE HEALTH PLAN] decided not to reconsider providing or paying for a particular treatment, would [MEDICARE HEALTH PLAN] have automatically referred it to another organization for an independent review?

☐ Yes

☐ No

☐ Don't Know

55. If this independent organization turned down your request for reconsideration to [MEDICARE HEALTH PLAN], did you have the right to ask for another review by a judge?

☐ Yes

☐ No

☐ Don't Know

ABOUT YOU

The next set of questions asks for your views about your health, about how you feel and how well you are able to do your usual activities.

56. In general, how would you rate your overall mental health now?

☐ Excellent

☐ Very good

☐ Good

☐ Fair

☐ Poor

57. In general, would you say your health is:

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

58. Compared to one year ago, how would you rate your health in general now?

- ☐ Much better now than one year ago
- ☐ Somewhat better now than one year ago
- ☐ About the same as one year ago
- ☐ Somewhat worse now than one year ago
- ☐ Much worse now than one year ago

The next two questions are about activities you might do during a typical day.

59. Does your health now limit you in doing moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf? If so, how much?

- ☐ Yes, limited a lot
- ☐ Yes, limited a little
- ☐ No, not limited at all

60. Does your health now limit you in climbing several flights of stairs? If so, how much?

- ☐ Yes, limited a lot
- ☐ Yes, limited a little
- ☐ No, not limited at all

The next two questions ask about your physical health and your daily activities in the past 4 weeks.

61. During the past 4 weeks, have you accomplished less than you would like as a result of your physical health?

- ☐ Yes
- ☐ No

62. During the past 4 weeks, were you limited in the kind of work or other activities you did as a result of your physical health?

☐ Yes

☐ No

The next two questions ask about problems with your work or other regular daily activities as a result of any emotional problems, such as feeling depressed or anxious.

63. During the past 4 weeks, have you accomplished less than you would like as a result of any emotional problems, such as feeling depressed or anxious?

☐ Yes

☐ No

64. During the past 4 weeks, did you do work or other regular activities less carefully than usual as a result of any emotional problems, such as feeling depressed or anxious?

☐ Yes

☐ No

65. During the past 4 weeks, how much did pain interfere with your normal work, including both work outside the home and housework?

☐ Not at all

☐ A little bit

☐ Moderately

☐ Quite a bit

☐ Extremely

The next three questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.

66. How much of the time during the past 4 weeks have you felt calm and peaceful?

☐ All of the time

☐ Most of the time

☐ A good bit of the time

☐ Some of the time

☐ A little of the time

☐ None of the time

67. How much of the time during the past 4 weeks did you have a lot of energy?

- ☐ All of the time
- ☐ Most of the time
- ☐ A good bit of the time
- ☐ Some of the time
- ☐ A little of the time
- ☐ None of the time

68. How much of the time during the past 4 weeks have you felt downhearted and blue?

- ☐ All of the time
- ☐ Most of the time
- ☐ A good bit of the time
- ☐ Some of the time
- ☐ A little of the time
- ☐ None of the time

69. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

- ☐ All of the time
- ☐ Most of the time
- ☐ Some of the time
- ☐ A little of the time
- ☐ None of the time

70. What is your age now?

- ☐ 64 or younger
- ☐ 65 to 69
- ☐ 70 to 74
- ☐ 75 to 79
- ☐ 80 or older

71. Are you male or female?

- ☐ Male
- ☐ Female

72. What is the highest grade or level of school that you have completed?

- ☐ 8th grade or less
- ☐ Some high school, but did not graduate
- ☐ High school graduate or GED
- ☐ Some college or 2-year degree
- ☐ 4-year college graduate
- ☐ More than 4-year college degree

73. Are you of Hispanic or Latino origin or descent?

- ☐ Hispanic or Latino
- ☐ Not Hispanic or Latino

74. What is your race? Please mark one or more.

- ☐ White
- ☐ Black or African-American
- ☐ Asian
- ☐ Native Hawaiian or other Pacific Islander
- ☐ American Indian or Alaska Native

75. Did someone help you complete this questionnaire?

- ☐ Yes → **If yes, go to Question 76 below**
- ☐ No → **If no, go to Question 77 on Page 18**

76. How did that person help you? Please check all that apply.

- ☐ Read the questions to me
- ☐ Wrote down the answers I gave
- ☐ Answered the questions for me
- ☐ Translated the questions into my language
- ☐ Helped me in some other way
(Please print.)

- 77. We would like to be able to contact you in case we have any questions about any of your answers. Please write your daytime telephone number below.**

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THANK YOU.

Please mail your completed questionnaire in the postage-paid envelope.

Appendix B
Disenrollment Reasons Grouping Methodology
Based on 2000 Disenrollment Reasons Survey

APPENDIX B

DISENROLLMENT REASONS GROUPING METHODOLOGY BASED ON 2000 DISENROLLMENT REASONS SURVEY

As noted previously, one of the primary purposes of conducting the Reasons Survey was to report reasons to consumers, via the Medicare Web site and other media, to supplement information on the rates at which people voluntarily disenroll from plans. The www.Medicare.gov Web pages include information about two major categories of “most important reasons” cited by people who leave Medicare plans. These two main categories were tested by the CAHPS development team during the development of draft report templates for inclusion of disenrollment rates and reasons in the *Medicare and You* handbook and on the Web. The two categories were given the following labels:

- Members left because of health care or services.
- Members left because of costs and benefits.

CMS reports each plan’s disenrollment rate first as a total rate, and then broken out according to these two main categories. For example, if the overall disenrollment rate for a plan is 10 percent, and 40 percent of enrollees surveyed cited problems with care or services and 60 percent cited concerns about costs, the percentages reported will be 10 percent, 4 percent, and 6 percent, respectively.

In addition, CMS wanted to allow consumers interested in more information about either of these categories to be able to “drill-down” to see more detailed subgroupings of reasons. This led to the following guidelines for developing appropriate groupings of disenrollment reasons:

1. The two main categories should address reasons related to care or services and cost or benefits.
2. The two main categories were to be mutually exclusive.
3. Each reason should be classified within either of the two main categories.
4. Each subgrouping should fall within only one of the two main categories.
5. Subgroupings of reasons should be mutually exclusive.
6. The number of subgroupings for reporting to consumers had to fit within the space constraints of a single Web page.
7. The number of groupings of reasons for reporting to health plans could be larger than the number of groupings for consumers, but the health plan groupings should be capable of being aggregated to the consumer level.

Early efforts to develop potential groupings of reasons were based on factor analyses of the first two quarters of 2000 reasons data.¹ These efforts produced groupings that appeared to have reasonable face validity, thus supporting the use of factor analysis for identifying groupings of reasons. Efforts to update these early results to include data from Quarter 3 yielded similar but not identical groupings of reasons. This suggests that there were some core groupings of reasons that related to each other consistently, and another, smaller group of reasons where changes in sample size led to different or dual factor loadings. In other words, there are some All Reasons that either could have been interpreted in different ways by respondents, or that may have been related to several different type of reasons.

When analyzing the full year of 2000 reasons data, we revised our approach to developing groupings of reasons to follow the consumer reporting approach (i.e., to first divide the reasons into two main categories, and then to divide each main category into appropriate subgroupings). There were two possible strategies we could follow in performing this initial division into two categories:

1. Manually assign each most important/all reason to the two main categories.
2. Analyze the data for possible groupings.

We chose to apply a combination of these strategies to divide the reasons into two categories.

Having allocated the All Reasons and Most Important Reasons (MIRs) between the two main categories (CARE or SERVICES and COSTS and BENEFITS), we then proceeded to conduct a series of factor analyses to identify potential subgroupings within each category:

1. Individual-level analysis of All Reasons.
2. Plan-level analysis of All Reasons.
3. Plan-level analysis of MIRs.

The remainder of the section describes the background and statistical methods used to identify appropriate groupings of reasons and the results of those analyses. As a result of a series of factor analyses and variable cluster analyses, we developed eight reason groupings: five groupings that address problems with care or service, and three groupings that address concerns

¹These efforts were conducted prior to the decision to follow the consumer reporting approach of dividing the reasons into two main categories, so the results from these efforts are not reported in this report.

about plan costs.² **Table B-1** shows the assignment of reasons survey items and labels to the reason groupings.³

Table B-1
Assignment of reasons for leaving a plan to groupings of reasons

Reasons grouping	Reasons for leaving a plan
Problems with care or service	
Problems with information from the plan	<ul style="list-style-type: none"> • Given incorrect or incomplete information at the time you joined the plan • After joining the plan, it wasn't what you expected • Information from the plan was hard to get or not very helpful • Plan's customer service staff were not helpful • Insecurity about future of plan or about continued coverage
Problems getting particular doctors	<ul style="list-style-type: none"> • Plan did not include doctors or other providers you wanted to see • Doctor or other provider you wanted to see retired or left the plan • Doctor or other provider you wanted to see was not accepting new patients • Could not see the doctor or other provider you wanted to see on every visit
Problems getting care	<ul style="list-style-type: none"> • Could not get appointment for regular or routine health care as soon as wanted • Had to wait too long in waiting room to see the health care provider you went to see • Health care providers did not explain things in a way you could understand • Had problems with the plan doctors or other health care providers • Had problems or delays getting the plan to approve referrals to specialists

²For reporting to consumers, three groupings (problems getting care, problems getting particular needs met, and other problems with care or service) are combined under the label "Getting care," and two other groupings ("premiums or copayments too high" and "copayments increased and/or another plan offered better coverage") are combined under the label "Premiums, Copayments, or Coverage".

³In addition to the preprinted reasons, there were two other reasons that were only collected when respondents cited them as their most important reason for leaving a plan (i.e., these two reasons were not among the preprinted reasons and thus were not included in the individual level analysis upon which we based the groupings: "insecurity about future of plan or continued coverage," and "no longer needed coverage under the plan"). The team manually assigned these two reasons to appropriate groupings.

Problems getting
particular needs met

- Had problems getting the care you needed when you needed it
 - Plan refused to pay for emergency or other urgent care
 - Could not get admitted to a hospital when you needed to
 - Had to leave the hospital before you or your doctor thought you should
 - Could not get special medical equipment when you needed it
 - Could not get home health care when you needed it
 - Plan would not pay for some of the care you needed
-

(continued)

Table B-1
Assignment of reasons for leaving a plan to groupings of reasons (continued)

Reasons grouping	Reasons for leaving a plan
Other problems with care or service	<ul style="list-style-type: none"> • It was too far to where you had to go for regular or routine health care • Wanted to be sure you could get the health care you need while you are out of town • Health provider or someone from the plan said you could get better care elsewhere • You or another family member, or friend had a bad experience with that plan
Concerns about costs and benefits	
Premiums or copayments too high	<ul style="list-style-type: none"> • Could not pay the monthly premium • Another plan would cost you less • Plan started charging a monthly premium or increased your monthly premium
Copayments increased and/or another plan offered better coverage	<ul style="list-style-type: none"> • Another plan offered better benefits or coverage for some types of care or services • Plan increased the copayment for office visits to your doctor and for other services • Plan increased the copayment that you paid for prescription medicines • No longer needed coverage under the plan
Problems getting or paying for prescription medicines	<ul style="list-style-type: none"> • Maximum dollar amount the plan allowed for your prescription medicine was too low • Plan required you to get a generic medicine when you wanted a brand name medicine • Plan would not pay for a medication that your doctor had prescribed

Each of the All Reasons variables were essentially dichotomous (i.e., “yes” if that was a reason a beneficiary left a plan, and “no” if the respondent did not indicate this was a reason why they left the plan). In order to conduct factor analysis at the individual level on these dichotomous variables, we imported the data into PRELIS/LISREL 8.3.⁴ For the plan-level analysis, values of the dichotomous variables were summed for each CMS contract number, and

⁴For the individual level data, we normalized the data prior to the factor analysis. While this was not required for factor analysis, standardization scales the data in a sample-specific manner. Given the changing environment in managed care plans and constantly shifting enrollment, it is appropriate to treat this as a sample-specific analysis.

a rate was calculated for each contract, where the numerator represents the number of disenrollees who endorsed the item, and the denominator was the number of complete interviews. Since this calculation created a variable that was no longer dichotomous, it was appropriate to use a standard statistical package for the factor analyses (we used SPSS v.10).

Since each respondent only indicated one MIR, it was not possible to conduct individual-level factor analysis for these reasons. For the plan-level analysis of the MIRs, we first converted the one variable containing the MIR code into 32 dichotomous variables⁵ representing the same reasons as the All Reasons.⁶ Thus, only one of these 32 variables had a value of 1 for an individual indicating their MIR. Plan-level variables were then calculated in the same manner as the plan-level All Reasons variables, and factor analyses were conducted using SPSS v.10.

When using factor analysis to determine groupings, the factors represent the common variance of variables, excluding the unique variance. While the technology of factor analysis provides factors, it is important for the researcher to determine whether the factors make sense in light of their knowledge of the topic. It is possible to have nonsensical factors emerge in an exploratory analysis.

The types of factoring used in the analysis also can determine the number of factors. For example, Principal Components Analysis (PCA) will create uncorrelated or orthogonal factors, and the number of factors that will be extracted result in the maximum variance. Principal Factor Analysis (PFA) seeks the least number of factors by estimating the squared multiple correlations of each variable, with the remainder of the variables in the matrix. According to Widaman (1993) principal components analysis should not be used to obtain parameters reflecting latent constructs or factors. In this case, we were attempting to obtain latent constructs, and thus used PFA.

The correlation matrix used for the analysis depends on the nature of the variables used in the analysis. Because of the dichotomous nature of the All Reasons questions, tetrachoric correlations were used in the individual-level factor analysis (hence our decision to use PRELIS/LISREL 8.3, which can produce a tetrachoric correlation matrix). A traditional correlation matrix was used for the plan-level analysis, based upon the continuous nature of the independent variables.

When determining the number of factors that seem important, the researcher generally looks at the eigenvalues. The eigenvalue for a given factor measures the variance in all the variables that is accounted for by the factor. The factor's eigenvalue may be computed as the sum of its squared factor loadings for all the variables. If a factor has a low eigenvalue, then it is contributing little to the explanation of variances in the variables, and may generally be ignored. We used the Kaiser-Guttman Rule for dropping factors from the analysis. The rule is to drop all factors that have an eigenvalue below 1.0. Any eigenvalue below 1.0 may be redundant with

⁵There is one less MIR code, since these codes were created prior to the addition of another reason in the Quarter 2 survey regarding inability pay the premium.

⁶This was performed by aggregating the important reason codes to the 10's level.

another more important factor. In addition, we also looked at the amount of variance explained to be sure to keep enough factors.

Factor rotation is important because it is difficult to interpret non-rotated solutions, because variables tend to load on multiple factors. In this case, we utilized varimax rotation because it minimizes the number of variables that have high loadings on any one given factor. It assists in identifying the variables associated with a single factor.

When examining the data, one looks at the factor loadings and determines which items load on the factor. The factor loadings are the correlation coefficients between the variables (rows) and the factors (columns). In this case, we followed guidelines suggesting that items should have a factor loading of at least 4.0 to be considered as contributing significantly to the factor. Analogous to a Pearson's r , the squared factor loading is the percentage of variance in the variable accounted for by the factor. For exploratory factor analysis, it is recommended (by Thurstone) that each factor have a minimum of three items loading on it (see Kim and Mueller, 1978:77).

Individual-level analysis. For the individual-level data, we were attempting in the analysis to uncover a latent structure of the 33 All Reasons variables. When the reasons had been assigned to each of the two main categories, we ran each category independent of the other. In an iterative fashion, we moved from one to four factors in both categories after normalizing the data. After three factors in the COST and BENEFITS grouping and after four factors in the CARE and SERVICES grouping, we no longer had three items loading on each factor, nor did each factor have an eigenvalue of 1.0. In the process, we discovered four items that did not load significantly on any one factor.⁷ We removed the four items from the analysis, as is generally recommended.

The convention used for determining the statistical appropriateness of the extracted factors was the same as that used in the plan-level analysis. That is, each factor had to have an eigenvalue over 1.0. Thus, it was first determined statistically that the most appropriate number of factors for the individual-level analysis of the All Reasons for the COST category was three. For the CARE and SERVICES factor analysis, it was a four-factor solution that met these statistical criteria. We then reviewed the factors to assess whether they seemed to make sense in terms of the substantive issues, and they clearly are congruent with the literature on disenrollment reasons. The factors were somewhat correlated with each other, suggesting that the factors within each of these categories should be measured together in order to fully understand the construct.

⁷You had no transportation or it was too far to the clinic or doctor's office where you had to go for regular or routine health care?

You wanted to be sure you could get the health care you need while you are out of town or traveling away from home?

Your doctor or other care health provider or someone from the plan told you that you could get better care elsewhere?

You or another family member or a friend had a bad experience with that plan?

Plan-level analysis. The factor procedure in SPSS allows for any number of factors to be extracted. In this case, we used the following two conventions to determine the validity of the factors that were extracted: if the eigenvalue of the factor was over 1.0 (the Kaiser Criterion), and the total amount of variance accounted for by the factors with values over 1.0 reached approximately 70 percent of the variance. In analyzing reasons at the plan level, we realized that inclusion of plans with low numbers of completed interviews might distort our results due to higher variance. Consequently, for all plan-level analyses we ran analyses twice: for all plans, and for those plans with 30 or more completed interviews.

For the reasons in the COSTS and BENEFITS category, we identified an optimal solution with three factors with eigenvalues over 1.0 that together explained 85 percent of the total variance. For the Problems with Care or Service category, we identified a four-factor solution that accounted for 76 percent of the total variance, after removing the three variables that were excluded from the individual-level analysis.

Similar to the plan-level analysis of all reasons, we used SPSS to identify potential groupings of most important reasons within the two main categories. Applying the same criteria for identifying the validity of factors that were extracted, we were unable to extract more than one factor within either the COSTS and BENEFITS or the CARE and SERVICE categories. The only factor solution with a significant result on the Chi-Square goodness of fit test was a three-factor solution for the most important reasons in the CARE and SERVICE category (among plans with 30 or more completed interviews), but this solution only explained 31 percent of the total variance.

When the statistical and substantive criteria had been met, we reviewed the factors and the items loading on the factors to determine whether there were differences between factors identified at the plan level and factors identified at the individual level of analysis. The factors for COST and BENEFITS were identical across the individual- and plan-level analyses, while there were minor differences in the loading of items in CARE and SERVICES.⁸ These minor differences might be explained in terms of data aggregation issues. It is likely that individuals from a specific plan may have had similar experiences that caused them to disenroll, and aggregation of these similar experiences by plan could result in some differences between the individual-level factor analysis and the plan-level factor analysis. The use of two different levels of variables (continuous and dichotomous) could also impact on the results, given the different correlation matrices used in the analysis. As mentioned earlier, in the plan-level analysis, the matrix was a Pearson correlation, while in the individual-level analysis, we used a tetrachoric correlation matrix.

Conceptually, one could argue either way between whether we are seeking to create groupings at the individual or the plan level—the information is coming from and is to be reported to consumers, but the data to be presented and compared will be at the plan level. In choosing between the differences in the individual- and plan-level factor loadings for the CARE and SERVICES, we weighted the individual-level results over the plan-level results. It appeared

⁸These results were also very similar to those derived from additional variable cluster analyses that were performed.

from our review that the individual-level factor analysis had captured the important domains, and that the items loading on those domains were, in fact, appropriate.

Having decided to use the individual-level results in favor of the plan-level results for deriving appropriate groupings of reasons, we were left with the tasks of determining how to handle the reasons that had not loaded on to any factors, and labeling the factors. The resulting reason groupings, while derived statistically, must also make sense in terms of how one might think about disenrollment from a plan.

Each of the four items that did not load on any factor may have been measuring something other than the other factors that had been extracted. For example, one of these items, the transportation question, may pull in two substantively different reasons: the respondent's own lack of transportation; or the plan's lack of clinics within a close geographic area. Meanwhile, the "care out of town" variable may reflect a more general concern about getting care in managed care plans in general, rather than a characteristic of a particular plan. Since none of these reasons could be statistically assigned to a specific grouping, we examined them to see whether they could be assigned based on their substance, but there was no existing grouping that captured the essence of any of the four reasons. Consequently, we decided to assign them to an "Other" factor within CARE and SERVICES. While such a "catch-all" category is less desirable than a more specific category, none of these reasons was cited frequently enough to warrant the creation of a single-item grouping. Furthermore, the use of the label "Other" implies that this grouping contains items not otherwise categorized, and thus, does not mislead users. The final step in the analysis involved reviewing the items within each group and labeling the groupings as clearly and succinctly as possible. Such labeling always involves a tradeoff between being able to provide full representation of all the items while maintaining a reasonable length for the label.⁹

⁹While these labels have not been explicitly tested with consumers, we drew upon expertise within the team from those involved in previous consumer testing of disenrollment information.

Appendix C
Subgroup Results for All Reasons Cited (Table Series A)
and Most Important Reasons Cited (Table Series B)
and Top Six Reasons Cited (Table Series C)

Table 1a
Percentage of all reasons cited by age

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results

	Age (Q.70)						
	Pooled responses			Responses			
	Total	64 or younger (proxy for disabled)	65 or older (aged)	64 or younger	65 to 69	70 to 74	75 to 79
Unweighted sample size	24,495	2,567	21,928	2,567	6,504	6,450	4,673
80 or older							4,301
Reasons groupings							
Total problems with care or service (%)							
Problems with information from the plan	35	50†	34†	50†	39†	33†	32†
Problems getting doctors you want	40	39	40	39	38	40	41
Problems getting care	31	42†	30†	42†	29†	31†	32†
Problems getting particular needs met	22	36†	21†	36†	19†	22†	21†
Other problems with care or service	27	32	26	32	24	27	26
Total concerns about costs							
Premiums or copayments too high	57	70†	56†	70†	57†	57†	58†
Copayments increased and/or another plan offered better coverage	54	65†	53†	65†	54†	54†	54†
Problems getting or paying for prescription medicines	30	49†	27†	49†	29†	27†	28†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 2a
Percentage of all reasons cited by sex

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	Sex (Q.71)	
	Responses	
All reasons cited (multiple responses possible)	Total	
Unweighted sample size	24,495	Female 14,160
Reasons groupings		
Total problems with care or service (%)		
Problems with information from the plan	35	36
Problems getting doctors you want	40	42
Problems getting care	31	31
Problems getting particular needs met	22	23
Other problems with care or service	27	28
Total concerns about costs		
Premiums or copayments too high	57	55
Copayments increased and/or another plan offered better coverage	54	53
Problems getting or paying for prescription medicines	30	31

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

Table 3a
Percentage of all reasons cited by race and ethnicity

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results									
	Race and ethnicity (Q.73, Q.74)								
	Pooled responses			Responses					
		Hispanic	Non-Hispanic	Hispanic	Non-Hispanic white	Non-Hispanic black or African-American	Non-Hispanic Hispanic other		
All reasons cited (multiple responses possible)	Total	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic white	Non-Hispanic black or African-American	Non-Hispanic Hispanic other		
Unweighted sample size	24,488	1,612	22,876	1,612	19,443	2,510	923		
Reasons groupings									
Total problems with care or service (%)									
Problems with information from the plan	35	48†	34†	48†	32†	47†	42†		
Problems getting doctors you want	40	37	40	37	41	32	37		
Problems getting care	31	40†	30†	40†	29†	35	35		
Problems getting particular needs met	22	24	22	24	21	29	20		
Other problems with care or service	27	37†	25†	37†	25†	30	26†		
Total concerns about costs									
Premiums or copayments too high	57	53	58	53†	56	65†	60		
Copayments increased and/or another plan offered better coverage	54	60	53	60	53	52	58		
Problems getting or paying for prescription medicines	30	36	29	36†	28	35	26†		

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 4a
Percentage of all reasons cited by education

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Highest grade of school completed (Q.72)					
All reasons cited (multiple responses possible)	Total	Pooled responses			Responses		
		Less than high school graduate	High school graduate or more	8 th grade or less	9 th – 11 th grade	High school graduate/ GED	Some college/ 2-year degree or more
Unweighted sample size	22,504	6,736	15,768	2,808	3,928	8,069	4,806
2,893							
Reasons groupings							
Total problems with care or service (%)							
Problems with information from the plan	36	40	34	45†	37	32†	35†
Problems getting doctors you want	40	36	41	32†	38	41	42†
Problems getting care	32	33	31	34	32	26†	35
Problems getting particular needs met	23	25	22	26	24	20	22
Other problems with care or service	26	27	26	28	26	24	29
Total concerns about costs							
Premiums or copayments too high	58	62	57	62	62	56	57
Copayments increased and/or another plan offered better coverage	56	58	55	58	57	53	59
Problems getting or paying for prescription medicines	30	32	30	34	31	32	29
26							

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 5a
Percentage of all reasons cited by self-assessed health status

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Self-assessed current health status (Q.57)						
All reasons cited (multiple responses possible)	Total	Pooled responses			Responses			
		Excellent to good	Fair to poor	Excellent	Very good	Good	Fair	Poor
Unweighted sample size	23,027	16,014	7,013	1,736	6,070	8,208	5,288	1,725
Reasons groupings								
Total problems with care or service (%)								
Problems with information from the plan	36	32†	46†	31†	31†	33†	44†	50†
Problems getting doctors you want	40	39	42	36	39	39	42	42
Problems getting care	32	28†	42†	26†	27†	29†	40†	45†
Problems getting particular needs met	23	18†	32†	17†	18†	19†	31†	37†
Other problems with care or service	27	25	32	24†	23†	26†	30	36†
Total concerns about costs								
Premiums or copayments too high	58	57	60	58	56	57	60	59
Copayments increased and/or another plan offered better coverage	56	53	61	49†	50†	57	61†	62†
Problems getting or paying for prescription medicines	30	26†	40†	19†	23†	30†	38†	47†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 6a
Percentage of all reasons cited by self-assessed health status now compared to 1 year ago

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results										
Self-assessed current health status compared to 1 year ago (Q.58)										
	Pooled responses				Responses					
	Total	Better now	About the same	Worse now	Much better now	Somewhat better now	About the same	Somewhat worse now	Much worse now	
All reasons cited (multiple responses possible)										
Unweighted sample size	23,043	4,295	13,653	5,095	1,778	2,517	13,653	4,011	1,084	
Reasons groupings										
Total problems with care or service (%)										
Problems with information from the plan	36	41†	31†	45†	40	42†	31†	43†	54†	
Problems getting doctors you want	40	42	38	41	41	43	38	41	44	
Problems getting care	32	38†	26†	41†	40†	37†	26†	38†	50†	
Problems getting particular needs met	23	27	18†	29†	26†	28†	18†	26†	42†	
Other problems with care or service	26	31	23†	33†	32	30†	23†	30†	41†	
Total concerns about costs										
Premiums or copayments too high	58	55	58	60	54	55	58	60	59	
Copayments increased and/or another plan offered better coverage	55	53	54	60	51	54	54	60	57	
Problems getting or paying for prescription medicines	30	33	27	36	32†	33	27†	34	42†	

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 7a
Percentage of all reasons cited by health status/health status change

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Combined health status and 1-year change in health status			
All reasons cited (multiple responses possible)	Total	Responses			
		Excellent to good health, whose health stayed the same or got better in past year	Excellent to good health, whose health worsened in past year	Fair or poor health, whose health stayed the same or got better in past year	Fair or poor health, whose health worsened in past year
Unweighted sample size	22,776	14,304	1,544	3,462	3,466
Reasons groupings					
Total problems with care or service (%)					
Problems with information from the plan	36	31†	42†	44†	47†
Problems getting doctors you want	40	39	37	42	43
Problems getting care	32	26†	41†	41†	41†
Problems getting particular needs met	23	18†	24	32†	32†
Other problems with care or service	26	23†	35†	30	32
Total concerns about costs					
Premiums or copayments too high	58	56	61	61	59
Copayments increased and/or another plan offered better coverage	55	52	56	61	61
Problems getting or paying for prescription medicines	30	26†	23†	38†	42†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 8a
Percentage of all reasons cited by number of outpatient visits in the 6 months before leaving plan

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results

Number of outpatient visits in the 6 months before leaving plan (Q.44)											
	Pooled responses				Responses						
	Total	None	1-3	4 or more	None	1	2	3	4	5 to 9	10 or more
All reasons cited (multiple responses possible)	20,968	2,445	10,023	8,500	2,445	2,656	3,960	3,407	2,520	3,951	2,029
Unweighted sample size											
Reasons groupings											
Total problems with care or service (%)											
Problems with information from the plan	36	41	32	39	41†	33	30†	34	39	39	41†
Problems getting doctors you want	40	32†	38	44†	32†	37	39	39	40	45†	45†
Problems getting care	32	31	29	35	31	26	29	32	36	34	37
Problems getting particular needs met	23	18	20	27	18	15†	19	24	25†	27†	30†
Other problems with care or service	27	26	24	32	26	22	24†	26	34†	28	34†
Total concerns about costs											
Premiums or copayments too high	58	65	57	57	65	56	60	55	60	56	54
Copayments increased and/or another plan offered better coverage	56	48†	55	59†	48†	45†	58†	58†	58†	61†	57†
Problems getting or paying for prescription medicines	30	19†	28	37†	19†	23†	28†	31†	32†	39†	39†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 9a
Percentage of all reasons cited by dually eligible status

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	Dually eligible	
	All reasons cited (multiple responses possible)	Responses
	Total	Yes No
Unweighted sample size	24,495	3,223 21,272
Reasons groupings		
Total problems with care or service (%)		
Problems with information from the plan	35	48† 33†
Problems getting doctors you want	40	31† 41†
Problems getting care	31	42† 29†
Problems getting particular needs met	22	30 21
Other problems with care or service	27	33 25
Total concerns about costs		
Premiums or copayments too high	57	68† 55†
Copayments increased and/or another plan offered better coverage	54	59 53
Problems getting or paying for prescription medicines	30	36 28

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 10a
Percentage of all reasons cited by number of months in plan before leaving (rapid versus non-rapid)

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results											
		Number of months in plan before leaving (Q.43)									
		Pooled responses		Responses							
		Rapid (5 months or less)	Non-rapid (6 months or more)	1 month or less		2 months	3 months	4 months	5 months	6 months or more	
All reasons cited (multiple responses possible)		Total	22,532	2,953	19,579	760	591	708	448	446	19,579
Reason groupings											
Total problems with care or service (%)											
Problems with information from the plan		36	55†	34†	53†	51†	58†	58†	53†	34†	34†
Problems getting doctors you want		40	37	40	34	30	33	58	42	40	40
Problems getting care		32	37	31	26	25	51	36	44	31	31
Problems getting particular needs met		22	24	22	21	20	26	28	27	22	22
Other problems with care or service		27	34	26	28	29	38	33	40	26	26
Total concerns about costs											
Premiums or copayments too high		58	50	59	36†	52†	58†	50†	55†	59†	59†
Copayments increased and/or another plan offered better coverage		56	50	57	43	46	48	60	61	57	57
Problems getting or paying for prescription medicines		30	28	30	24	21	29	28	41	30	30

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 11a
Percentage of all reasons cited by quarter in which disenrollee left plan

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Quarter in which disenrollee left plan			
All reasons cited (multiple responses possible)	Total	Responses			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4
Unweighted sample size	24,495	6,603	5,265	4,405	8,222
Reason groupings					
Total problems with care or service (%)					
Problems with information from the plan	35	39†	40†	39†	29†
Problems getting doctors you want	40	41	43†	49†	32†
Problems getting care	31	30	33	36	29
Problems getting particular needs met	22	22	21	25	22
Other problems with care or service	27	27	29	30	24
Total concerns about costs					
Premiums or copayments too high	57	57†	46†	46†	68†
Copayments increased and/or another plan offered better coverage	54	53	51	48†	59†
Problems getting or paying for prescription medicines	30	29	32	28	29

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 12a
Percentage of all reasons cited by frequency and choice of coverage after disenrollment

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results

All reasons cited (multiple responses possible)	Frequency and choice of coverage after disenrollment					
	Pooled frequency		Disenrollment > 1			Disenrollment = 1
	2001 disenrollment > 1	2001 disenrollment = 1	All to MC	All other	To MC	To FFS
Unweighted sample size	23,952	20,974	1,753	1,225	7,932	13,042
Reason groupings						
Total problems with care or service (%)						
Problems with information from the plan	35	35	39†	28†	25†	43†
Problems getting doctors you want	39	39	43	41	38	39
Problems getting care	31	31	30	30	22†	37†
Problems getting particular needs met	22	22	21	19	19	25
Other problems with care or service	27	27	27	23	23	30
Total concerns about costs						
Premiums or copayments too high	57	59†	47†	51†	56	61†
Copayments increased and/or another plan offered better coverage	54	55	54†	42†	57†	53†
Problems getting or paying for prescription medicines	29	30	31	23	31	29

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 13a
Percentage of all reasons cited by choice of coverage

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results			
All reasons cited (multiple responses possible)	Choice of coverage after disenrollment		
	Total	Disenrolled to MC	Disenrolled to FFS
Unweighted sample size	24,495	10,361	14,134
Reason groupings			
Total problems with care or service (%)			
Problems with information from the plan	35	27†	43†
Problems getting doctors you want	40	40	39
Problems getting care	31	24†	37†
Problems getting particular needs met	22	20	24
Other problems with care or service	27	23	29
Total concerns about costs			
Premiums or copayments too high	57	54	60
Copayments increased and/or another plan offered better coverage	54	55	53
Problems getting or paying for prescription medicines	30	31	28

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 14a
Percentage of all reasons by proxy interviewer status

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	All reasons cited (multiple responses possible)	Proxy interviews	
		Total	Responses No Yes
Unweighted sample size		24,495	22,873 1,622
Reason groupings			
Total problems with care or service (%)			
Problems with information from the plan	35	35	39
Problems getting doctors you want	40	40	36
Problems getting care	31	31	33
Problems getting particular needs met	22	22	28
Other problems with care or service	27	27	26
Total concerns about costs			
Premiums or copayments too high	57	57	58
Copayments increased and/or another plan offered better coverage	54	54	52
Problems getting or paying for prescription medicines	30	29	32

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

Table 15a
Percentage of all reasons cited by new personal doctor

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	New personal doctor (Q.45)	
	All reasons cited (multiple responses possible)	Responses
	Total	Yes No
Unweighted sample size	22,648	7,596 15,052
Reasons groupings		
Total problems with care or service (%)		
Problems with information from the plan	36	42 33
Problems getting doctors you want	39	43 37
Problems getting care	32	41† 27†
Problems getting particular needs met	23	25 22
Other problems with care or service	27	32 24
Total concerns about costs		
Premiums or copayments too high	58	58 59
Copayments increased and/or another plan offered better coverage	56	58 55
Problems getting or paying for prescription medicines	31	31 31

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 16a
Percentage of all reasons cited by received information on how to file a complaint

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Received information on how to file a complaint (Q.48)	
All reasons cited (multiple responses possible)	Total	Responses	
		Yes	No
Unweighted sample size	15,880	4,196	11,684
Reasons groupings			
Total problems with care or service (%)			
Problems with information from the plan	35	32	36
Problems getting doctors you want	39	39	39
Problems getting care	32	29	33
Problems getting particular needs met	23	24	22
Other problems with care or service	27	28	27
Total concerns about costs			
Premiums or copayments too high	58	58	58
Copayments increased and/or another plan offered better coverage	57	57	57
Problems getting or paying for prescription medicines	31	31	31

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

Table 1b
Percentage of reasons cited as most important by age

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Age (Q.70)						
Reasons cited as most important	Total	Pooled responses			Responses			
		64 or younger (proxy for disabled)	65 or older (aged)	64 or younger	65 to 69	70 to 74	75 to 79	80 or older
Unweighted sample size	22,470	2,369	20,101	2,369	6,006	5,909	4,245	3,941
Reasons groupings								
Total problems with care or service (%)								
Problems with information from the plan	5	6	5	6	5	4	6	7
Problems getting doctors you want	26	16†	27†	16†	26†	26†	28†	29†
Problems getting care	9	12	9	12	8	10	9	10
Problems getting particular needs met	4	5	4	5	3	4	3	4
Other problems with care or service	5	1	6	1	5	6	6	7
Total concerns about costs								
Premiums or copayments too high	33	33	33	33	35	33	34	27
Copayments increased and/or another plan offered better coverage	9	10	9	10	11	8	8	11
Problems getting or paying for prescription medicines	8	16	8	16	9	9	6	6

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 2b
Percentage of reasons cited as most important by sex

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	Sex (Q.71)	
	Male	Female
Reasons cited as most important	Total	Responses
Unweighted sample size	22,470	13,002
Reasons groupings		
Total problems with care or service (%)		
Problems with information from the plan	5	6
Problems getting doctors you want	23	28
Problems getting care	10	9
Problems getting particular needs met	4	4
Other problems with care or service	4	6
Total concerns about costs		
Premiums or copayments too high	33	31
Copayments increased and/or another plan offered better coverage	9	8
Problems getting or paying for prescription medicines	8	9

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

Table 3b
Percentage of reasons cited as most important by race and ethnicity

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Race and ethnicity (Q.73, Q.74)					
Reasons cited as most important	Total	Pooled responses		Responses			
		Hispanic	Non-Hispanic	Hispanic	Non-Hispanic white	Non-Hispanic black or African-American	Non-Hispanic other
Unweighted sample size	22,463	1,459	21,004	1,459	17,948	2,227	829
Reasons groupings							
Total problems with care or service (%)							
Problems with information from the plan	5	6	5	6	5	7	7
Problems getting doctors you want	26	18	27	18†	29†	16†	18†
Problems getting care	9	13	9	13	9	10	11
Problems getting particular needs met	4	3	4	3	4	4	2
Other problems with care or service	5	9	5	9	5	5	7
Total concerns about costs							
Premiums or copayments too high	33	27	34	27†	33	36	38†
Copayments increased and/or another plan offered better coverage	9	13	9	13	9	12	11
Problems getting or paying for prescription medicines	8	12	8	12	8	9	7

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 4b
Percentage of reasons cited as most important by education

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Highest grade of school completed (Q.72)					
Reasons cited as most important	Total	Pooled responses			Responses		
		Less than high school graduate	High school graduate or more	8 th grade or less	9 th – 11 th grade	High school graduate/ GED	Some college/ 2-year degree or more
Unweighted sample size	20,782	6,081	14,701	2,518	3,563	7,472	2,705
Reasons groupings							
Total problems with care or service (%)							
Problems with information from the plan	5	6	5	5	6	5	6
Problems getting doctors you want	25	20	28	17†	23	29†	28†
Problems getting care	9	8	10	9	7	8	11
Problems getting particular needs met	4	4	4	4	5	4	3
Other problems with care or service	5	5	5	6	4	5	5
Total concerns about costs							
Premiums or copayments too high	33	38	31	38	38	33	32
Copayments increased and/or another plan offered better coverage	10	10	9	12	9	8	9
Problems getting or paying for prescription medicines	9	9	9	9	9	9	7

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 5b
Percentage of reasons cited as most important by self-assessed health status

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Self-assessed current health status (Q.57)						
Reasons cited as most important	Total	Pooled responses			Responses			
		Excellent to good	Fair to poor	Excellent	Very good	Good	Fair	Poor
Unweighted sample size	21,257	14,844	6,415	1,627	5,634	7,583	4,823	1,590
Reasons groupings								
Total problems with care or service (%)								
Problems with information from the plan	5	5	6	4	5	5	6	8
Problems getting doctors you want	25	26	23	26	26	27	24	23
Problems getting care	10	9	11	7	9	9	11	12
Problems getting particular needs met	4	3	5	2	3	4	5	4
Other problems with care or service	5	5	5	8	5	5	4	5
Total concerns about costs								
Premiums or copayments too high	33	34	30	41†	37†	30†	31†	27†
Copayments increased and/or another plan offered better coverage	9	9	9	6	9	10	9	11
Problems getting or paying for prescription medicines	9	8	10	5	7	10	10	11

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 6b
Percentage of reasons cited as most important by self-assessed health status now compared to 1 year ago

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results										
Self-assessed current health status compared to 1 year ago (Q.58)										
Reasons cited as most important	Total	Pooled responses				Responses				
		Better now	About the same	Worse now	Much better now	Somewhat better now	About the same	Somewhat worse now	Much worse now	
Unweighted sample size	21,256	3,904	12,691	4,661	1,615	2,289	12,691	3,671	990	
Reasons groupings										
Total problems with care or service (%)										
Problems with information from the plan	5	5	5	6	5	5	5	5	8	
Problems getting doctors you want	25	26	26	24	29	25	26	24	24	
Problems getting care	9	15	7	12	17†	13	7†	11	15	
Problems getting particular needs met	4	5	3	4	4	6	3	4	4	
Other problems with care or service	5	4	6	5	3	5	5	4	6	
Total concerns about costs										
Premiums or copayments too high	33	26†	36†	32	24†	28	36†	34†	25†	
Copayments increased and/or another plan offered better coverage	9	8	10	9	8	8	10	9	9	
Problems getting or paying for prescription medicines	9	10	8	9	10	10	8	9	10	

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 7b
Percentage of reasons cited as most important by health status/health status change

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Combined health status and 1-year change in health status			
Reasons cited as most important	Total	Responses			
		Excellent to good health, whose health stayed the same or got better in past year	Excellent to good health, whose health worsened in past year	Fair or poor health, whose health stayed the same or got better in past year	Fair or poor health, whose health worsened in past year
Unweighted sample size	21,031	13,273	1,419	3,167	3,172
Reasons groupings					
Total problems with care or service (%)					
Problems with information from the plan	5	5	5	5	6
Problems getting doctors you want	25	27	21	22	25
Problems getting care	9	8	18	13	9
Problems getting particular needs met	4	3	3	6	4
Other problems with care or service	5	5	6	5	4
Total concerns about costs					
Premiums or copayments too high	33	34	32	29	33
Copayments increased and/or another plan offered better coverage	9	10	6	9	10
Problems getting or paying for prescription medicines	9	8	8	12	9

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

Table 8b
Percentage of reasons cited as most important by number of outpatient visits in the 6 months before leaving plan

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results

Reasons cited as most important	Number of outpatient visits in the 6 months before leaving plan (Q.44)									
	Pooled responses					Responses				
	Total	None	1-3	4 or more	None	1	2	3	4	5 to 9 or more
Unweighted sample size	19,447	2,251	9,316	7,990	2,251	2,488	3,691	3,137	2,324	3,688
Reasons groupings										
Total problems with care or service (%)										
Problems with information from the plan	5	7	5	6	7	6	4	5	6	6
Problems getting doctors you want	26	18	27	26	18	26	26	27	25	27
Problems getting care	9	9	8	11	9	6†	8	10	11	14†
Problems getting particular needs met	4	4	3	5	4	3	3	4	3	6
Other problems with care or service	5	6	5	5	6	6	4	5	6	4
Total concerns about costs										
Premiums or copayments too high	33	40†	35	29†	40	36	36	33	30	27
Copayments increased and/or another plan offered better coverage	9	12	9	9	12	10	8	8	9	8
Problems getting or paying for prescription medicines	9	4	9	10	4	7	10	9	10	8

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 9b
Percentage of reasons cited as most important by dually eligible status

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	Dually eligible		
	Reasons cited as most important	Total	Responses
			Yes No
Unweighted sample size		22,470	2,922 19,548
Reasons groupings			
Total problems with care or service (%)			
Problems with information from the plan	5	6	5
Problems getting doctors you want	26	11†	28†
Problems getting care	9	13	9
Problems getting particular needs met	4	4	4
Other problems with care or service	5	5	5
Total concerns about costs			
Premiums or copayments too high	33	40	32
Copayments increased and/or another plan offered better coverage	9	12	9
Problems getting or paying for prescription medicines	8	9	8

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 10b
Percentage of reasons cited as most important by number of months in plan before leaving (rapid versus non-rapid)

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results

Reasons cited as most important	Number of months in plan before leaving (Q.43)									
	Total	Pooled responses		Responses						
		Rapid (5 months or less)	Non-rapid (6 months or more)	1 month or less	2 months	3 months	4 months	5 months	6 months or more	
Unweighted sample size	20,864	2,715	18,149	690	543	648	415	419	18,149	
Reason groupings										
Total problems with care or service (%)										
Problems with information from the plan	5	8	5	11	11	6	5	8	5	
Problems getting doctors you want	25	24	26	29	17	21	26	29	26	
Problems getting care	10	12	9	8†	7†	19†	10	11	9†	
Problems getting particular needs met	4	3	4	3	1	2	8	3	4	
Other problems with care or service	5	8	4	12	13	4	5	6	4	
Total concerns about costs										
Premiums or copayments too high	33	24†	34†	15†	29†	32†	15†	20†	34†	
Copayments increased and/or another plan offered better coverage	10	12	9	14	14	7†	21†	6†	9†	
Problems getting or paying for prescription medicines	8	10	8	8	8	9	9	17	8	

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 11b
Percentage of reasons cited as most important by quarter in which disenrollee left plan

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results

Reasons cited as most important	Total	Quarter in which disenrollee left plan			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4
Unweighted sample size	22,470	6,108	4,811	3,979	7,472
Reason groupings					
Total problems with care or service (%)					
Problems with information from the plan	5	5	6	6	5
Problems getting doctors you want	26	26	30†	33†	19†
Problems getting care	9	9	12	10	8
Problems getting particular needs met	4	3	3	5	4
Other problems with care or service	5	6	6	6	4
Total concerns about costs					
Premiums or copayments too high	33	31†	23†	23†	44†
Copayments increased and/or another plan offered better coverage	9	11	12	10	7
Problems getting or paying for prescription medicines	8	9	9	8	8

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 12b
Percentage of reasons cited as most important by frequency and choice of coverage after disenrollment

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results

Reasons cited as most important	Frequency and choice of coverage after disenrollment					
	Pooled frequency		Disenrollment > 1			Disenrollment = 1
	2001 disenrollment > 1	2001 disenrollment = 1	All to MC	All other	To MC	To FFS
Unweighted sample size	21,966	2,704	19,262	1,590	1,114	7,310
Reason groupings						
Total problems with care or service (%)						
Problems with information from the plan	5	5	5	6	5	5
Problems getting doctors you want	26	31	25	31†	32†	20†
Problems getting care	9	6	10	5	8	13
Problems getting particular needs met	4	3	4	4	2	4
Other problems with care or service	5	8	5	10	4	5
Total concerns about costs						
Premiums or copayments too high	33	28	34	25†	32	37†
Copayments increased and/or another plan offered better coverage	9	8	10	8	8	11
Problems getting or paying for prescription medicines	7	10	8	11	9	6

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 13b
Percentage of reasons cited as most important by choice of coverage

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results			
Reasons cited as most important	Total	Choice of coverage after disenrollment	
		Disenrolled to MC	Disenrolled to FFS
Unweighted sample size	22,470	9,514	12,956
Reason groupings			
Total problems with care or service (%)			
Problems with information from the plan	5	5	5
Problems getting doctors you want	26	31†	21†
Problems getting care	9	5	13
Problems getting particular needs met	4	4	4
Other problems with care or service	5	6	5
Total concerns about costs			
Premiums or copayments too high	33	29	37
Copayments increased and/or another plan offered better coverage	9	8	11
Problems getting or paying for prescription medicines	8	12	6

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 14b
Percentage of reasons cited as most important by proxy interviewer status

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results			
Reasons cited as most important	Proxy interviews		
	Total	Responses	
		No	Yes
Unweighted sample size	22,470	20,950	1,520
Reason groupings			
Total problems with care or service (%)			
Problems with information from the plan	5	5	5
Problems getting doctors you want	26	26	23
Problems getting care	9	9	9
Problems getting particular needs met	4	4	5
Other problems with care or service	5	5	6
Total concerns about costs			
Premiums or copayments too high	33	33	35
Copayments increased and/or another plan offered better coverage	9	9	9
Problems getting or paying for prescription medicines	8	9	7

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

Table 15b
Percentage of reasons cited as most important by new personal doctor

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		New personal doctor (Q.45)	
Reasons cited as most important	Total	Responses	
		Yes	No
Unweighted sample size	20,963	7,018	13,945
Reasons groupings			
Total problems with care or service (%)			
Problems with information from the plan	5	5	5
Problems getting doctors you want	25	24	26
Problems getting care	10	14	7
Problems getting particular needs met	4	4	4
Other problems with care or service	5	6	4
Total concerns about costs			
Premiums or copayments too high	33	32	34
Copayments increased and/or another plan offered better coverage	9	9	10
Problems getting or paying for prescription medicines	9	7	10

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

Table 16b
Percentage of reasons cited as most important by received information on how to file a complaint

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Received information on how to file a complaint (Q.48)	
Reasons cited as most important	Total	Responses	
		Yes	No
Unweighted sample size	14,664	3,948	10,716
Reasons groupings			
Total problems with care or service (%)			
Problems with information from the plan	5	5	5
Problems getting doctors you want	25	26	24
Problems getting care	10	8	11
Problems getting particular needs met	4	5	4
Other problems with care or service	5	4	5
Total concerns about costs			
Premiums or copayments too high	34	36	33
Copayments increased and/or another plan offered better coverage	9	8	9
Problems getting or paying for prescription medicines	7	8	9

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.

Table 1c
Percentage citing top six reasons by age

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Age (Q.70)						
Top six reasons	Unweighted sample size	Pooled responses			Responses			
		64 or younger						
		64 or younger (proxy for disabled)	65 or older (aged)	64 or younger	65 to 69	70 to 74	75 to 79	80 or older
Another plan offered better benefits	22,326	44	44	44	46	46	44	39
Another plan cost less	22,753	48	42	48	43	45	42	36
Monthly premiums went up	21,853	54†	43†	54†	44†	44†	45	39†
Plan did not include your doctors	23,115	35	30	35	29	31	31	30
Plan was not what you expected	22,716	40†	26†	40†	31	23†	26†	24†
Could not pay monthly premium	22,978	45†	29†	45†	30†	30†	31†	26†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 2c
Percentage citing top six reasons by sex

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	Sex (Q.71)	
	Unweighted sample size	Responses
Top six reasons		Male Female
Another plan offered better benefits	22,326	44 44
Another plan cost less	22,753	44 42
Monthly premiums went up	21,853	47 42
Plan did not include your doctors	23,115	29 32
Plan was not what you expected	22,716	27 28
Could not pay monthly premium	22,978	32 31

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

Table 3c
Percentage citing top six reasons by race and ethnicity

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Race and ethnicity (Q.73, Q.74)					
Top six reasons	Unweighted sample size	Pooled responses		Responses			
		Hispanic	Non-Hispanic	Hispanic	Non-Hispanic white	Non-Hispanic black or African-American	Non-Hispanic other
Another plan offered better benefits	22,322	47	44	47	44	39	49
Another plan cost less	22,748	41	43	41	43	42	48
Monthly premiums went up	21,849	35†	46†	35†	44	51†	52†
Plan did not include your doctors	23,110	28	31	28	32	24	31
Plan was not what you expected	22,711	37†	26†	37†	24†	40†	30†
Could not pay monthly premium	22,974	30	31	30†	28	45†	40†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 4c
Percentage citing top six reasons by education

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results									
Highest grade of school completed (Q.72)									
	Unweighted sample size	Pooled responses			Responses				
		Less than high school graduate	High school graduate or more	8 th grade or less	9 th – 11 th grade	High school graduate/ GED	Some college/ 2-year degree	Bachelor's degree or more	
Top six reasons									
Another plan offered better benefits	21,135	45	44	44	45	42	48	42	
Another plan cost less	21,497	44	43	41	46	43	43	41	
Monthly premiums went up	20,691	47	44	46	47	42	46	44	
Plan did not include your doctors	21,694	29	31	24	30	32	31	30	
Plan was not what you expected	21,475	32	25	37†	28	24†	27†	25†	
Could not pay monthly premium	21,500	39†	27†	39†	39†	29†	26†	27†	

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 5c
Percentage citing top six reasons by self-assessed health status

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results									
Self-assessed current health status (Q.57)									
Top six reasons	Unweighted sample size	Pooled responses			Responses				
		Excellent to good	Fair to poor	Excellent	Very good	Good	Fair	Poor	
Another plan offered better benefits	21,630	43	46	41	41	45	47	43	
Another plan cost less	22,012	43	44	47	41	43	45	40	
Monthly premiums went up	21,160	44	45	44	46	43	46	41	
Plan did not include your doctors	22,210	28	35	24†	30	29	35†	34†	
Plan was not what you expected	21,987	24†	35†	22†	25	24†	34†	38†	
Could not pay monthly premium	22,000	28	36	36	28†	28†	34	39†	

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 6c
Percentage citing top six reasons by self-assessed health status now compared to 1 year ago

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results									
Self-assessed current health status compared to 1 year ago (Q.58)									
Top six reasons	Unweighted sample size	Pooled responses				Responses			
		Better now	About the same	Worse now	Much better now	Somewhat better now	About the same	Somewhat worse now	Much worse now
Another plan offered better benefits	21,637	44	42	47	41	46	42	47	48
Another plan cost less	22,017	40	44	42	40	40	44	44	37
Monthly premiums went up	21,169	38	45	46	39	38	45	47	43
Plan did not include your doctors	22,214	34	28	33	33	34	28	33	33
Plan was not what you expected	21,988	31	23†	34†	33†	30†	23†	32†	43†
Could not pay monthly premium	22,014	29	30	33	26	30	30	32	35

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 7c
Percentage citing top six reasons by health status/health status change

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Combined health status and 1-year change in health status			
Top six reasons	Unweighted sample size	Responses			
		Excellent to good health, whose health stayed the same or got better in past year	Excellent to good health, whose health worsened in past year	Fair or poor health, whose health stayed the same or got better in past year	Fair or poor health, whose health worsened in past year
Another plan offered better benefits	21,424	42	48	44	47
Another plan cost less	21,808	42	43	44	42
Monthly premiums went up	20,966	43	49	44	45
Plan did not include your doctors	21,989	29	27	34	35
Plan was not what you expected	21,773	23†	32	34†	36†
Could not pay monthly premium	21,786	29	24†	34†	37†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 8c
Percentage citing top six reasons by number of outpatient visits in the 6 months before leaving plan

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results										
		Number of outpatient visits in the 6 months before leaving plan (Q.44)								
Top six reasons	Unweighted sample size	Pooled responses			Responses					
		None	1-3	4 or more	None	1	2	3	4	5 to 9 or more
Another plan offered better benefits	19,835	39	44	46	39	37†	45	46	47†	46
Another plan cost less	20,152	46	43	41	46	42	47	40	43	40
Monthly premiums went up	19,410	51	44	43	51†	41†	47	41	49†	39†
Plan did not include your doctors	20,319	25	29	33	30	25	28	29	30	36†
Plan was not what you expected	20,129	33†	23†	29	33†	25	21†	24	30	29
Could not pay monthly premium	20,144	37	30	29	37	27	31	30	29	29

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 9c
Percentage citing top six reasons by dually eligible status

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	Dually eligible	
	Unweighted sample size	Responses
Top six reasons		Yes No
Another plan offered better benefits	22,326	44 44
Another plan cost less	22,753	45 42
Monthly premiums went up	21,853	50 43
Plan did not include your doctors	23,115	26 32
Plan was not what you expected	22,716	38† 26†
Could not pay monthly premium	22,978	51† 27†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 10c
Percentage citing top six reasons by number of months in plan before leaving (rapid versus non-rapid)

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results

		Number of months in plan before leaving (Q.43)						
Top six reasons	Unweighted sample size	Pooled responses		Responses				
		Rapid (5 months or less)	Non-rapid (6 months or more)	1 month or less				
				2 months	3 months	4 months	5 months	6 months or more
Another plan offered better benefits	21,190	42	44	31	45	41	53	44
Another plan cost less	21,568	35	44	31	40	30	43	44
Monthly premiums went up	20,743	30	46	37	29	34	35	46
Plan did not include your doctors	21,765	29†	30	25	28	36	32	30
Plan was not what you expected	21,544	48†	25†	39	50	55	47	25
Could not pay monthly premium	21,533	29	31	36	29	31	29	31

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 11c
Percentage citing top six reasons by quarter in which disenrollees left plan

Top six reasons	Quarter in which disenrollee left plan				
	Unweighted sample size	Responses			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4
Another plan offered better benefits	22,326	41	42	43	48
Another plan cost less	22,753	39†	32†	33†	55†
Monthly premiums went up	21,853	47†	32†	30†	55†
Plan did not include your doctors	23,115	33	35†	38†	24†
Plan was not what you expected	22,716	31	31	33†	22†
Could not pay monthly premium	22,978	33†	23†	23†	37†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 12c
Percentage citing top six reasons by frequency and choice of coverage after disenrollment

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results		Frequency and choice of coverage after disenrollment				
Top six reasons	Unweighted sample size	Pooled frequency		Disenrollment > 1		Disenrollment = 1
		2001 disenrollment > 1	2001 disenrollment = 1	All to MC	All other	
Another plan offered better benefits	21,830	48	44	49†	35†	52†
Another plan cost less	22,251	42	43	46†	37†	53†
Monthly premiums went up	19,196	33†	51†	33†	32†	44†
Plan did not include your doctors	22,607	33	30	32	34	29
Plan was not what you expected	22,210	28	27	29	26	18†
Could not pay monthly premium	22,471	23	32	18†	30†	26†
						36

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 13c
Percentage citing top six reasons by choice of coverage

Top six reasons	Choice of coverage after disenrollment		
	Unweighted sample size	Disenrolled to MC	Disenrolled to FFS
Another plan offered better benefits	22,326	50†	38†
Another plan cost less	22,753	51†	35†
Monthly premiums went up	21,853	37	31
Plan did not include your doctors	23,115	30	31
Plan was not what you expected	22,716	20†	34†
Could not pay monthly premium	22,978	25†	36†

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Table 14c
Percentage citing top six reasons by proxy interviewer status

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	Proxy interviews		
	Unweighted sample size	Responses	
Top six reasons		No	Yes
Another plan offered better benefits	22,326	44	44
Another plan cost less	22,753	43	37
Monthly premiums went up	21,853	45	39
Plan did not include your doctors	23,115	31	28
Plan was not what you expected	22,716	27	30
Could not pay monthly premium	22,978	31	36

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

Table 15c
Percentage citing top six reasons by new personal doctor

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	New personal doctor (Q.45)	
	Unweighted sample size	Responses
Top six reasons		Yes No
Another plan offered better benefits	21,442	44 44
Another plan cost less	21,790	42 43
Monthly premiums went up	20,962	48 44
Plan did not include your doctors	21,973	34 28
Plan was not what you expected	21,774	31 25
Could not pay monthly premium	21,746	29 32

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

Table 16c
Percentage citing top six reasons by received information on how to file a complaint

2001 Medicare CAHPS Disenrollment Reasons Survey Subgroup Results	Received information on how to file a complaint (Q.48)		
	Unweighted sample size	Responses	
Top six reasons		Yes	No
Another plan offered better benefits	15,061	47	44
Another plan cost less	15,322	48	43
Monthly premiums went up	14,726	43	45
Plan did not include your doctors	15,441	27	30
Plan was not what you expected	15,305	21	28
Could not pay monthly premium	15,303	27	30

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data. Each column totals to more than 100% because respondents could cite reasons in more than one group.

Table 17c
Percentage citing top six reasons by needed but didn't receive care

2001 Medicare CAHPS Disenrollment Reasons Subgroup Results	Ever a time when needed care that plan or doctor decided not to give you (Q.49)		
	Unweighted sample size	Responses	
Top six reasons		Yes	No
Another plan offered better benefits	15,105	54†	45†
Another plan cost less	15,351	39	45
Monthly premiums went up	14,776	42	44
Plan did not include your doctors	15,467	40†	27†
Plan was not what you expected	15,336	51†	20†
Could not pay monthly premium	15,341	28	30

The unweighted sample size represents the actual number of survey respondents, but the percentages in the tables are based on weighted data.
Each column totals to more than 100% because respondents could cite reasons in more than one group.

†Statistically significant at the 95% level of confidence and at least a 10 percentage point difference between groups.

Appendix D

Market-Level Analysis

APPENDIX D

MARKET-LEVEL ANALYSIS

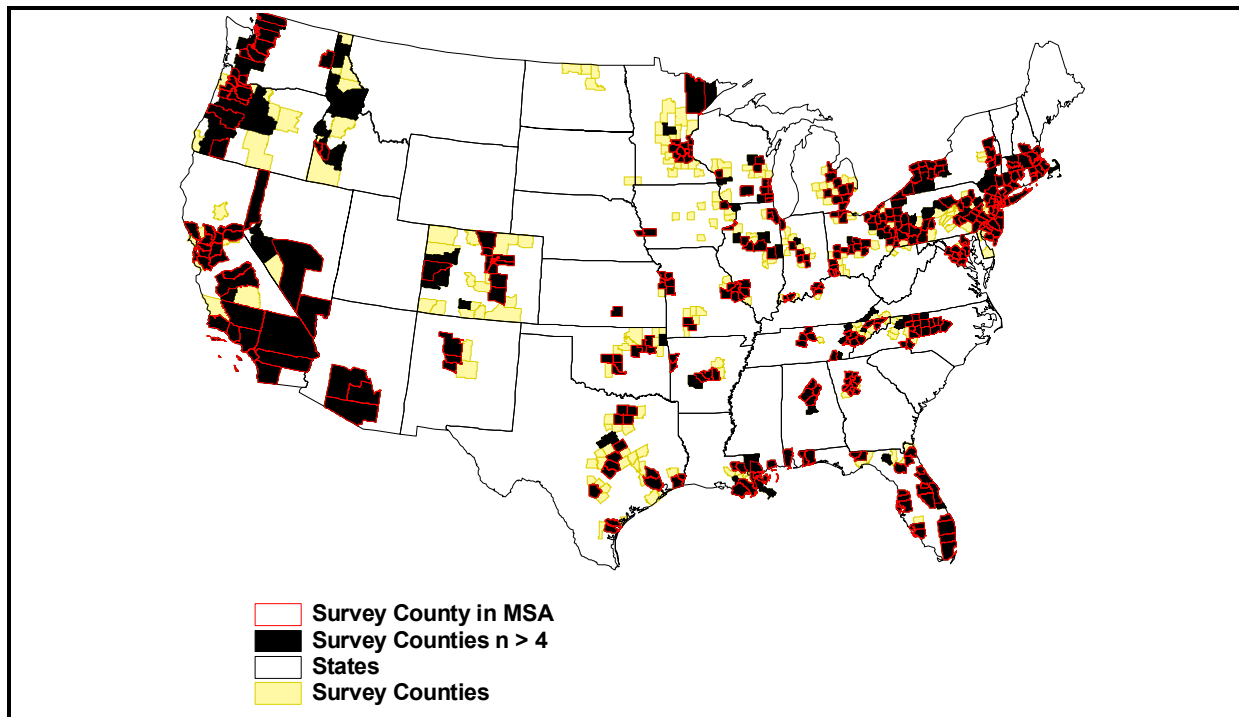
This appendix, market-level analysis, is organized as follows. First, we provide an introduction which explains our motivation for conducting the market-level analysis. Next, we describe the spatial cluster analysis we performed for the 2001 five Most Important Reasons (MIRs) given for voluntary disenrollment from Medicare + Choice (M+C) plans. Cluster regions (hot spots) are identified where unusually high rates of particular reason responses were found in some regions, suggesting a “coincidence of complaints” that could be caused by underlying plans or market features. These hot spots are mapped by reason (**Figure D-1**). This identification of hot spots is followed by a statistical analysis of the differences in beneficiary, plan, and market factors underling the *hot spot versus other* regions. The statistical results are then used to help determine which few of many variables are to be used in the multivariate logistic regressions.

We recognize in this work that market factors are important, and we have developed a contextual model (**Chapter 1**) that depicts an interplay between person, plan, and market variables in determining our outcomes of interest: the reasons given for voluntary disenrollment from M+C. We hypothesize that market- and plan-level factors will help explain observed responses, and our subgroup analysis is vastly complicated by the fact that we have a multiplicity of variables that we could use in capturing market-specific and plan-specific effects. For example, we have at least a dozen variables measuring competition in markets, and several very highly inter-correlated variables describing plan benefits, which are also highly correlated with market competition. All levels of the context are important, but we cannot use every variable at hand due to redundancies in what these variables capture.

To trim the set of possible variables to a minimum, feasible set for modeling purposes, we first conducted the spatial cluster analysis described in this appendix. We view the mapped clusters as descriptive of spatial patterns in the data, which suggest that underlying market or plan factors may be contributing to the observed clustering in the MIR rates. This analysis provides us with a broad picture of the differences in market climate across regions with unusually high rates of reasons given for disenrollment, versus other regions where there is no apparent pattern to the reason rates. Using this cluster analysis as a basis, we can then perform subsequent analyses to help us determine, from our multitude of market variables, which subset seems to be most important at this highest level of aggregation in our contextual model. Also, we can investigate whether some plan-level variables (which have a distinct geographic footprint, as do market-level variables) seem to explain more than others, at this highest level of aggregation. Based on this higher-order, big-picture view of the variation in our data, we can make an informed choice about the plan-level and market-level variables to include in our individual-level subgroup analysis model. With these subsets of plan- and market-level variables in hand, we can then build beneficiary-level models including all subgroup characteristics of interest to the Centers for Medicare & Medicaid Services (CMS). These models (both the individual logits for each preprinted reason, and the multinomial logit model for MIR) can be used to assess the importance of subgroup characteristics on reasons, holding constant statistically the important dimensions of plan- and market-level covariation. Thus, we can interpret subgroup effects with “all else constant,” which reduces the amount of confounding that might occur through important omitted variables bias.

Figure D-1

Survey counties with greater than four respondents (black), survey counties with less than five respondents (yellow), and survey counties in metropolitan areas (red outline)



Spatial Cluster Analysis of the 2001 MIR

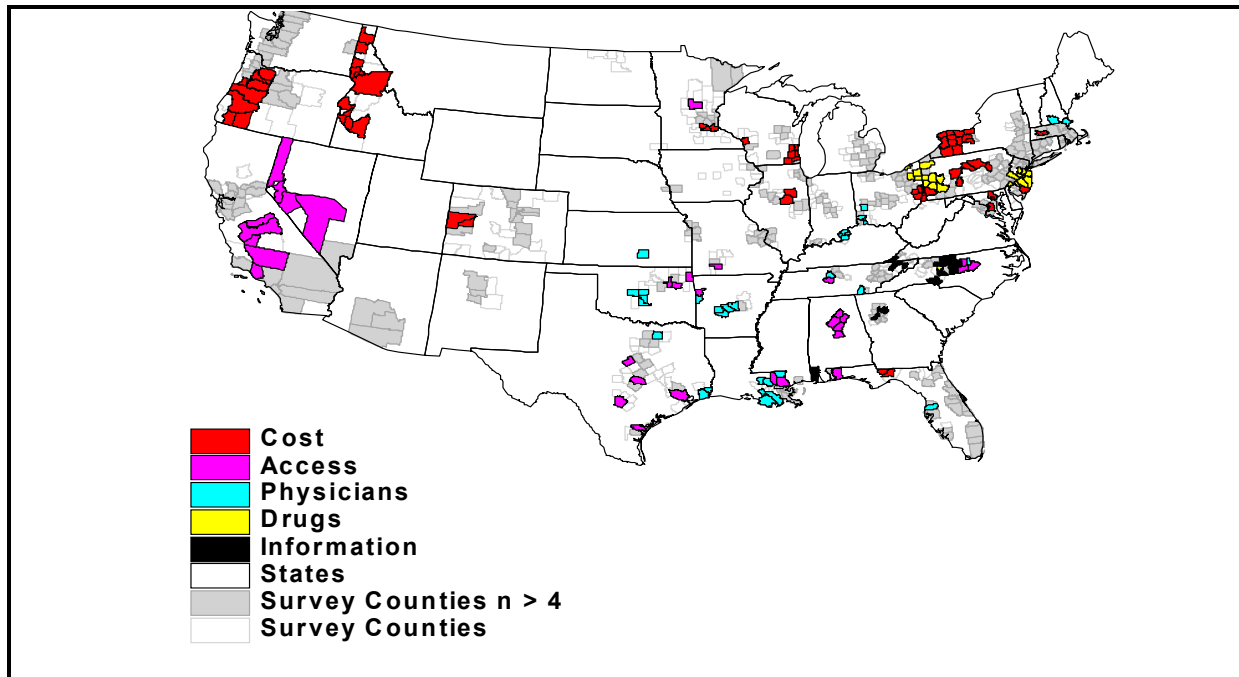
The spatial cluster analysis we performed for the 2001 MIR groupings was based on clustering in the five MIR rates per county. In the first run, we included all counties with survey respondents; in the second run, we included only those counties with five or more survey respondents. We then compared the cluster results from the two passes to assess whether the clustering significance tests could be affected by the sparse counts in some counties. The places identified as “hot spots” (where the correlation between Reason X in a county and its neighbors was significantly higher than likely could have occurred by chance) were not affected by the sparseness of some counties. In other words, counties identified as hot spots in the first run were also identified as hot spots in the second run. **Figure D-1** shows the hot spots by reason grouping for the 2001 data, in counties with greater than four respondents.

One important finding is that the hot spot counties are less urban than non-hot spot (“other”) counties. Along the urban-rural continuum, we can place the counties with less than five respondents as the most rural, the hot spot counties themselves as next-most rural, and the other counties as the most urban (**Table D-1**). The urban-rural continuum in our data is also somewhat evident in **Figure D-2**, where survey counties with less than five respondents (yellow) tend to be located around the periphery of other surveyed counties (black), which tend to be located in metropolitan areas (red outline).

Table D-1
Sample counties by number of respondents, hot spot designation, and urban intensity

Total counties in 2001 sample: 670	n = 220 counties with < 5 respondents	n = 450 counties with > 4 respondents	
Hot spot county or not?	no n = 220	yes n = 169	no n = 281
Average percentage urban in this group of counties	0.429	0.676	0.780

Figure D-2
**Spatial clustering in five Most Important Reasons given for disenrollment in 2001,
including all survey counties with n > 4 respondents (97.7% of respondents)**



Hot spots in the five MIR groups are mapped in a separate color for each reason (**Figure D-1**). One interesting finding was that the five different reason clusters did not substantially overlap with one another. Some patterns of regional problem areas are apparent in the mapping. For example, drug-related reasons seem to cluster in the Northeast, while many physician choice problem areas appear South-centrally located. Information problems seem to be more prevalent in the Southeast, while cost and access reasons seem to be problematic in all regions of the United States. We focus our comparative analyses (below) rather broadly on all places with hot spots in *any* reason, versus non-hot spot (“other”) places.

Analysis of Differences in Hot Spots and Other Places

The next step in this analysis was to assess whether plan characteristics or market conditions differed in the hot spot versus the other regions. Because all five reason group hot spots are grouped together in these analyses, the differences in means in **Table D-2** are suggestive of broad patterns, rather than determinants of individual reasons, which can vary (as found in the individual logistic regression analysis of each MIR).

Table D-2 presents the comparisons of means for the plan- and market-level variables across hot spots and other regions. Because we use variables in this analysis that are subsequently dropped, a description of all variables is provided in **Table D-2**, but not elsewhere in this report. The plan characteristics are analyzed at the beneficiary level (i.e., from the beneficiary's perspective). The market variables are analyzed at the county level, which is the geographic unit for these data.

We find that the characteristics of the plans held by beneficiaries in the hot spots versus other places do vary. Plans in hot spots have higher copays and lower drug and dental coverage. Health Plan Employer and Data Information Set (HEDIS) scores at the plan level (for plans that report these scores, assigned to their beneficiaries) also vary across hot spots and other places. We assigned a low score to plans that were not exempt from reporting (due to small size) but who elected not to report data, based on findings from the literature that such cases were more likely to occur in low-quality plans (Thompson et al., 2003). We find that eye exam rates for diabetics are proportionately higher for beneficiaries in hot spots than in other places, suggesting better quality care in this dimension. However, rates of breast cancer screening are lower, and proportionately more diabetics have poor HbA1c control, suggesting worse quality care in hot spot regions in these quality dimensions.

County-level market analysis: As noted above, beneficiaries in hot spot counties are more likely to hold plans with little or no drug coverage. The lower propensity for drug coverage mirrors an interesting finding from the county-level HEDIS data. The HEDIS data aggregated to the county level and weighted by plan-specific market shares in counties gives an indication of the broader managed care market climate. We find that hot spot counties tend to be located in places where the M+C plans offer lower coverage for Beta Blocker drugs for patients with coronary heart disease, and where higher proportions of diabetic patients have poor HbA1c control. Other quality measures based on care practices that do not involve drugs, such as whether eye exams are given for diabetics or whether breast cancer screening is given to women, do not vary much between hot spots and other places.

Turning next to the analysis of county-level demographic data, hot spot counties contain proportionately larger U.S. census populations of poorer elderly (in both the younger and elder ends of the elderly age distribution), have proportionately more lower-income elderly households (< \$30,000 annually, in 1999), and have proportionately fewer higher-income (> \$50,000) elderly households than non-hot spot counties. There are also lower proportions of homebound disabled elderly in the hot spots and a lower proportion of elderly with little or no English language ability.

Table D-2
Beneficiary-level comparisons of variable means across regions

Beneficiary's plan's characteristics	Description of variable	Mean in other places	Mean in hot spots
Sample frame	Beneficiary-level comparisons	n = 16,978 of 17,013	n = 6,868 of 6,917
PREMIUM	Scale	22.531	33.508
PREMGT50	Monthly premium; 1: > \$50, 0: ≤ \$50	0.185	0.245
OVPCGE20	Pooled PCP office visit, 1: ≥ \$20, 0: < \$20	0.022	0.099
DRUGSOME	0: No drug coverage 1: Some drug coverage	0.708	0.348
INPLT200	Pooled inpatient copayment: 1: < \$200; 2: ≥ \$200	0.792	0.820
OVPC	PCP Office Visit 1: < \$5 2: \$5 – \$9 3: \$10 – \$14 4: \$15 – \$19 5: ≥ \$20	2.707	2.760
BRNDDRUG	0: No coverage of brand name Rx 1: Limited coverage of brand name Rx 2: Unlimited coverage of brand name Rx	0.619	0.284
GENDRUG	0: No coverage of generic Rx 1: Limited coverage of generic Rx 2: Unlimited coverage of generic Rx	1.079	0.475
DENTSOME	0: No dental coverage 1: Some dental coverage	0.299	0.161
Sample frame	Beneficiary-level comparisons	n = 17,013 of 17,013	n = 6,917 of 6,917
YEARSOP	Years plan in operation	9.401	7.657
MSHAREPLAN	Plan's market share of Medicare market in plan's service area	0.085	0.093
FORPROFIT	Plan has for-profit ownership (1) or not (0)	0.661	0.645
CHAIN	Plan is member of chain (1) or not (0)	0.535	0.501
Sample frame*	Beneficiary-level comparisons	n = 14,864 of 17,013	n = 5,875 of 6,917

(continued)

Table D-2
Beneficiary-level comparisons of variable means across regions (continued)

Beneficiary's plan's characteristics	Description of variable	Mean in other places	Mean in hot spots
EOC003-0010-in 1999	Plan's HEDIS score on breast cancer screening for women (% who received)	73.14	72.89
Sample frame*	Beneficiary-level comparisons	n = 15,363 of 17,013	n = 6,258 of 6,917
EOC020-0070- in 1999	Plan's HEDIS score on eye exams for diabetics (% who received)	58.35	59.72
Sample frame*	Beneficiary-level comparisons	n = 15,380 of 17,013	n = 6,236 of 6,917
EOC020-0040- in 1999	Plan's HEDIS score on poor HbA1c control for diabetics (% who received)	33.53	34.47

*Not all plans reported HEDIS scores. Plans that were so small that they were exempt are missing from this analysis. Plans that were large enough to report but failed to do so were assigned a low score, based on evidence from the literature that this sort of elective nonreporting was typically used by plans with poor quality (Thompson et al., 2003).

Finally, in **Table D-3**, we see that the hot spot counties are in states with greater perceived primary care physician shortages (MDSHORT01) but lower turnover rates among physicians in M+C plans' networks (MDTURNOVER). This latter finding is consistent with the hot spot population's better rating of their care and plan (HLTHCARE, HLTHPLAN). The plans joined/left by beneficiaries in hot spot areas tend to be newer (YEARSOP), with a larger market share of the Medicare market in their service areas (MSHAREPLAN). The plans in hot spot counties also face lower competition in M+C (HERF_INV), and are paid lower capitation rates (ABRATE01). Lower payments and lower competition can contribute to the less generous benefits observed in the hot spot regions. Finally, the hot spot counties are in places with lower average managed care penetration in Medicare and in the private sector (MCPENE00, HMOPPO01), but larger increases in managed care penetration in recent years (PENEDIF, HMOPPO_DIF).

Summary of Results from Spatial Cluster Analysis, Used to Inform Logistic Model Specification

These cluster analyses are simple and quite informative. Going forward, we expect that market factors favoring competition and ease of network building for MCOs, which impact benefits structure, are likely to be important variables to include in our analysis. Of the plan benefit variables, DRUGSOME or PREMIUM may be important, and HEDIS measures at the market level, especially regarding drug coverage (BETABLOK) are likely to be important. Either M+C penetration and change (MCPENE00, PENEDIF) or private market managed care

Table D-3
County-level comparisons of variable means across regions

Market conditions	Description of variable	Mean in other places	Mean in hot spots
Sample frame	County-level comparisons	n = 281	n = 169
ABRATE01	M+C payment rate, 2001	548.4	538.1
MCPENE00	M+C penetration in 2000	0.225	0.196
PENEDIF	Change in M+C penetration, 1998–2000	0.025	0.035
HMOPPO01*	Combined market shares of private HMO and PPO plans, 2001	0.67	0.65
HMOPPO_DIF*	Change in above, 1994 to 2001	0.270	0.337
XURBAN	Proportion of county that is urban, 2000	0.780	0.676
TOTELD00	Total elderly population in 2000	56,000	31,000
PYOUNG00	Proportion of elderly population aged 65–74, 2000	0.529	0.533
PYOUNGDIF	Change in the above, 1990–2000	–0.063	–0.055
XHOME_DIS	Proportion of disabled elderly who are homebound, 2000	0.243	0.238
XLOW	Proportion of the elderly with low income, 2000	0.456	0.503
XHIGH	Proportion of the elderly with high income, 2000	0.297	0.251
MD_ELD_K	MDs per 1,000 elderly in 2000	16.88	15.38
XPOORNE	Proportion of the elderly speaking no or poor English, 2000	0.029	0.014
BCSCREEN*	% Female beneficiaries receiving breast cancer screening	75.807 (n = 270/281)	74.492 (n = 167/169)
BETABLOK*	% CHD beneficiaries receiving Beta Blockers	91.265 (n = 238/281)	88.38 (n = 126/169)
EYEEXAM*	% Diabetic beneficiaries receiving eye exam	65.72 (n = 268/281)	64.42 (n = 167/169)
POOR_Hbalc*	% Diabetic beneficiaries with poor Hbalc control	28.34 (n = 268/281)	36.5 (n = 166/169)

(continued)

Table D-3
County-level comparisons of variable means across regions (continued)

Market conditions	Description of variable	Mean in other places	Mean in hot spots
MDTURNOVER*	MD turnover rate within the plan	12.75 (n = 270/281)	11.13 (n = 162/169)
MDSHORT01**	Percent population underserved by PCPs	9.108	10.612
SASSIGNMT**	Percent of physicians accepting assignment, 2001	88.98	89.29

*County weighted average of HEDIS scores for all plans reporting in that county, weighted by the plan's market share in that county.

**State-level variable assigned to counties and averaged over counties in the t-test.

penetration and change (HMOPPO01; HMOPPO_DIF) could be included to capture the managed care climate in markets. YEARSOP might be included with these to help characterize newer, smaller, emerging M+C markets where plans have less experience. Some measure of market size (XURBAN or TOTELD) and provider availability (MDSHORT01) should be included to reflect difficulty in establishing managed care networks in smaller markets. Finally, as a proxy for income, Census 2000 data on the proportion of the elderly with low income (XLOW or XPOOR) are expected to contribute to the analysis.

Using the insights gained from the cluster analysis, we were able to determine which market-level variables were most likely to discriminate the most between “problem” areas and other areas. As a next step, we then correlated this subset with all beneficiary-level subgroup variables and plan-level variables. The plan-level benefits variables were very highly correlated with one another, and based on findings from the cluster analysis, we chose DRUGSOME as the representative benefits variable to use in the logistic analyses. Finally, we selected from the subset of market variables those that were less correlated with the subgroup and plan-level variables. Our goal was to narrow the list to 12–15 variables that captured the important dimensions of our contextual model, without introducing redundancy among the covariates. The final list of 15 selected for the binary logistic analysis are described in **Table 4**. For the GLM, we dropped dual eligibility and gender, which were not significant predictors, to further narrow the model to 13 variables. As shown in the GLM discussion of results, because every variable has a separate parameter in each reason equation and there are multiple interaction terms, narrowing the set of relevant variables aids considerably in interpreting the empirical results.